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BLUE JAY

Volume 69 Number 3
September 2011

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2011

SCI/TECH

Front cover: *Pheasant feathers.* *Kerry Hecker*

Back cover: *"There's only one thing a turkey can do at a time like this ... strut !" This photo was taken 2 miles south of Maple Creek, SK, following a freak spring snowstorm.* *Randy McCulloch*

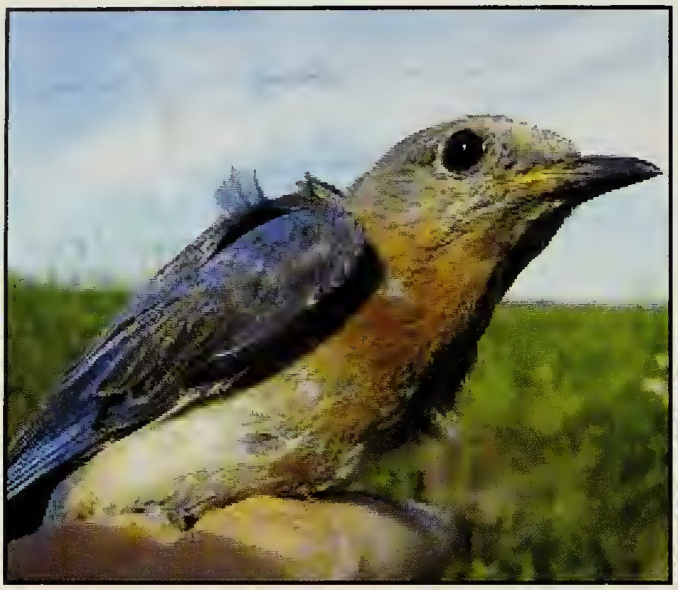


Figure 3. Adult female eastern bluebird captured for banding. See article by Calon & Priestley on p. 110.

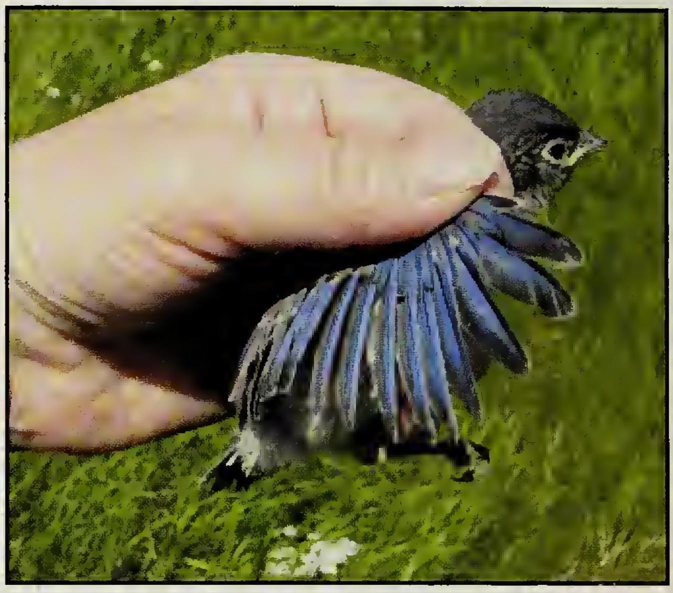
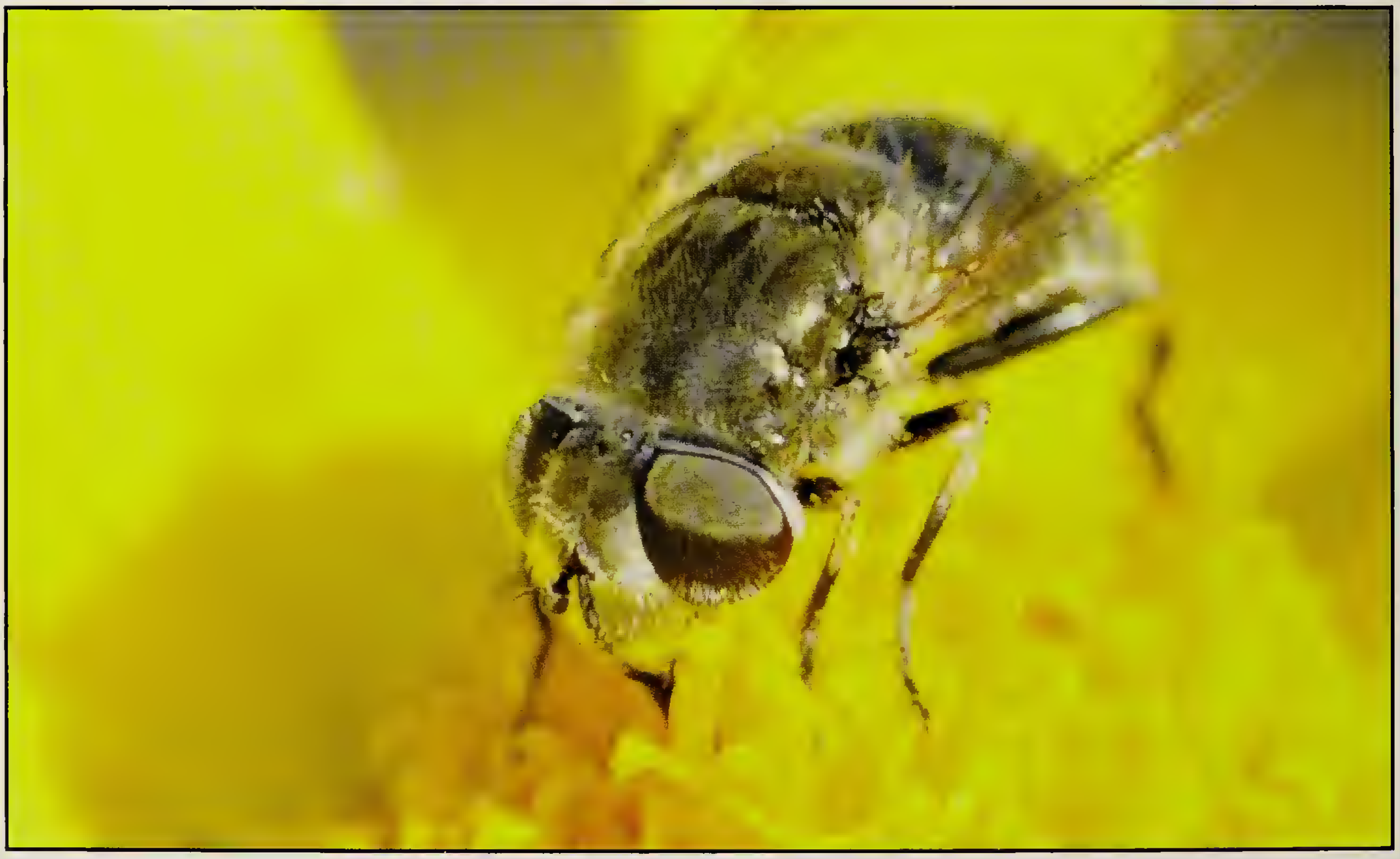


Figure 4. Young male eastern bluebird (about 2 weeks old), 1 week before fledging. See article by Calon & Priestley on p. 110.



Arnica fulgens *with bee fly.* *Lowell Strauss*

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CONFIRMED BREEDING RECORD OF EASTERN BLUEBIRDS NEAR BEAVERHILL LAKE, ALBERTA

Katie Calon, Lisa Priestley

Beaverhill Bird Observatory, Box 1418, Edmonton, AB, T5J 2N5

The Beaverhill Bird Observatory (BBO) has been monitoring a series of nest boxes within and outside of the Beaverhill Lake Natural Area in central Alberta since the early 1990s. Mountain bluebirds (*Sialia currucoides*) commonly nest along the roads around Beaverhill Lake, and are fairly common in all Natural regions in Alberta except in boreal forest.[1] Elson Olorenshaw established bluebird nest boxes in 1995 and monitored them until his passing in 2002. Fourteen boxes are present along range roads near Highway 626 and Francis Point in close proximity to Beaverhill Lake. The habitat is characterised by open pasture land with stunted patches of trembling aspen and pockets of willow.

In the summer of 2010, the BBO staff was surprised to find the nest of an uncommon species in one of the boxes. An eastern bluebird (*S. sialis*) was discovered on 29 June 2010 in a nest box, located at UTM 12U 395993 5912940 (6.5 km east of Tofield, Alberta). The following is a timeline of the monitoring of the nest box during the 2010 breeding season.

13 May: First visit to the nest box (Fig. 1). A large, grass, cup-shaped nest lacking feathers had been started in the box; nest was characteristic of a mountain bluebird, but no birds were observed.

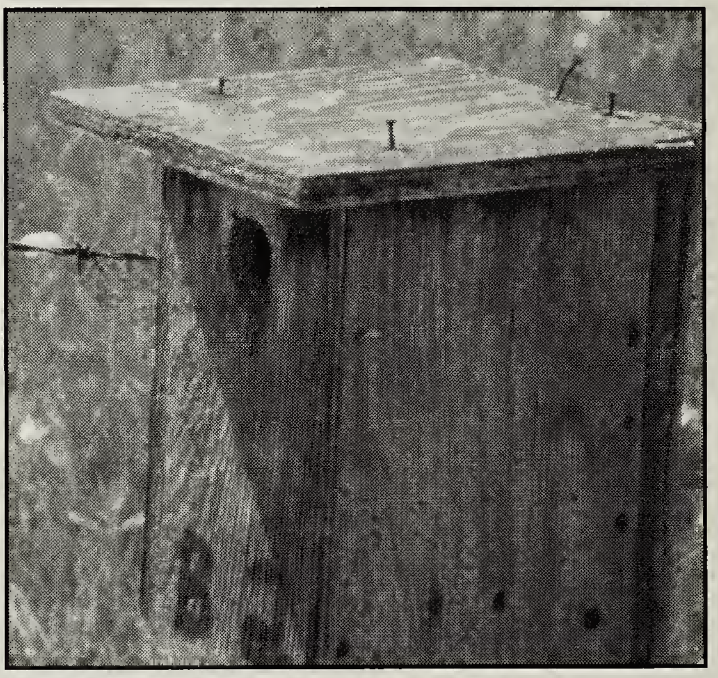

Figure 1. Nest box used by eastern bluebirds near Beaverhill Lake, AB.

10 June: Second visit to the nest. Two cold, blue eggs were present. On this date, four nests of mountain bluebird young were banded in nest boxes nearby.

16 June: Four cold eggs present in the nest (no adults seen around nest box).

29 June: Four chicks were found in the nest, but were not old enough to be banded (Fig. 2). A clear plastic door flap was attached to the inside of the box in an attempt to capture adults as they came in to feed the young (no adults had been seen in or near the box during the previous visits). Trap was left in the

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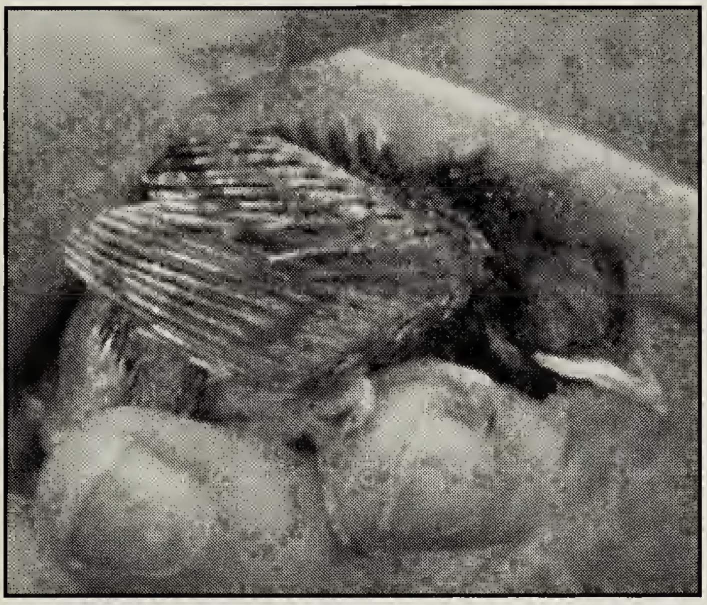

Figure 2. Nestling eastern bluebird, about 10 days old.

box for approximately 30 minutes; staff were surprised to find that it was not a mountain bluebird, but a female eastern bluebird (Fig. 3, see inside front cover, top left). She was banded (#1541-15701) and identified as a second-year individual.[2] The male responded to her alarm calls during the banding and came in to investigate, allowing us to identify him as a male eastern bluebird.

5 July: The four chicks were banded (#1451-90902 to 05). A trap door was placed in the box again, to try and capture the male; he was observed near the box with a beak full of food, but he seemed to detect the trap door and was unwilling to enter the box. The trap was removed, and staff hid near the box in hopes of manually trapping the male in the box when he entered to feed the young. After an hour of attempting to capture the male, the staff left the box as he continued to refuse to enter.

9 July: The four chicks were examined again after more of their pin feathers had emerged; band numbers 1451-90902, 03, and 05 were identified as females, and 04 a male (Fig. 4, see inside front cover, top right), based on the intensity and extent of blue coloration in the wing coverts, primaries, and rectrices;[2] both adults were observed near the box carrying food, but neither was captured.

Although widespread in eastern North America, the range of the eastern bluebird is limited in southern Alberta and southeastern Saskatchewan (occasionally there are records north to Saskatoon and Greenwater Lake districts).[3] The eastern bluebird first appeared in Manitoba in the latter 1800s, in Saskatchewan by the 1920s, and in southeastern Alberta during the 1970s.[4] This species is considered rare in Alberta.[1]

The Alberta Bird Record Committee evaluates and classifies records of rare birds within Alberta. A summary of 21 eastern bluebird records was obtained,[5–7] although the records for this species may not be as complete as those of more extreme rarities like the western bluebird (J. Hudon pers. comm.). Of the records provided, ten described breeding evidence (a pair seen together, a nest, young, or fledglings). The closest record to the nest we found was that of an individual eastern bluebird observed near Lindbrook (approximately 10 km west of Tofield) from 22 April to 7 June 1999. There was no mention of this individual breeding. Only one breeding record was north of Beaverhill Lake, just south of Fort McMurray at Anzac in 2006.

The nest discovered in 2010 near the Beaverhill Natural Area is the largest clutch size (4 eggs) reported for a pair of eastern bluebirds nesting within the province of Alberta. Eastern bluebirds lay three to eight eggs, and clutch sizes tend to be larger in the central part of their range.[4]

Acknowledgements

We thank the Beaverhill Bird Observatory board of directors for their support. We thank Alberta Conservation Association, Nature Canada (Charles

Labatiuk Fund), for funding the nest box work as part of our operations. We also thank Jocelyn Hudon for providing information from the rare birds committee on Alberta records of eastern bluebirds. We thank an anonymous reviewer for editorial comments.

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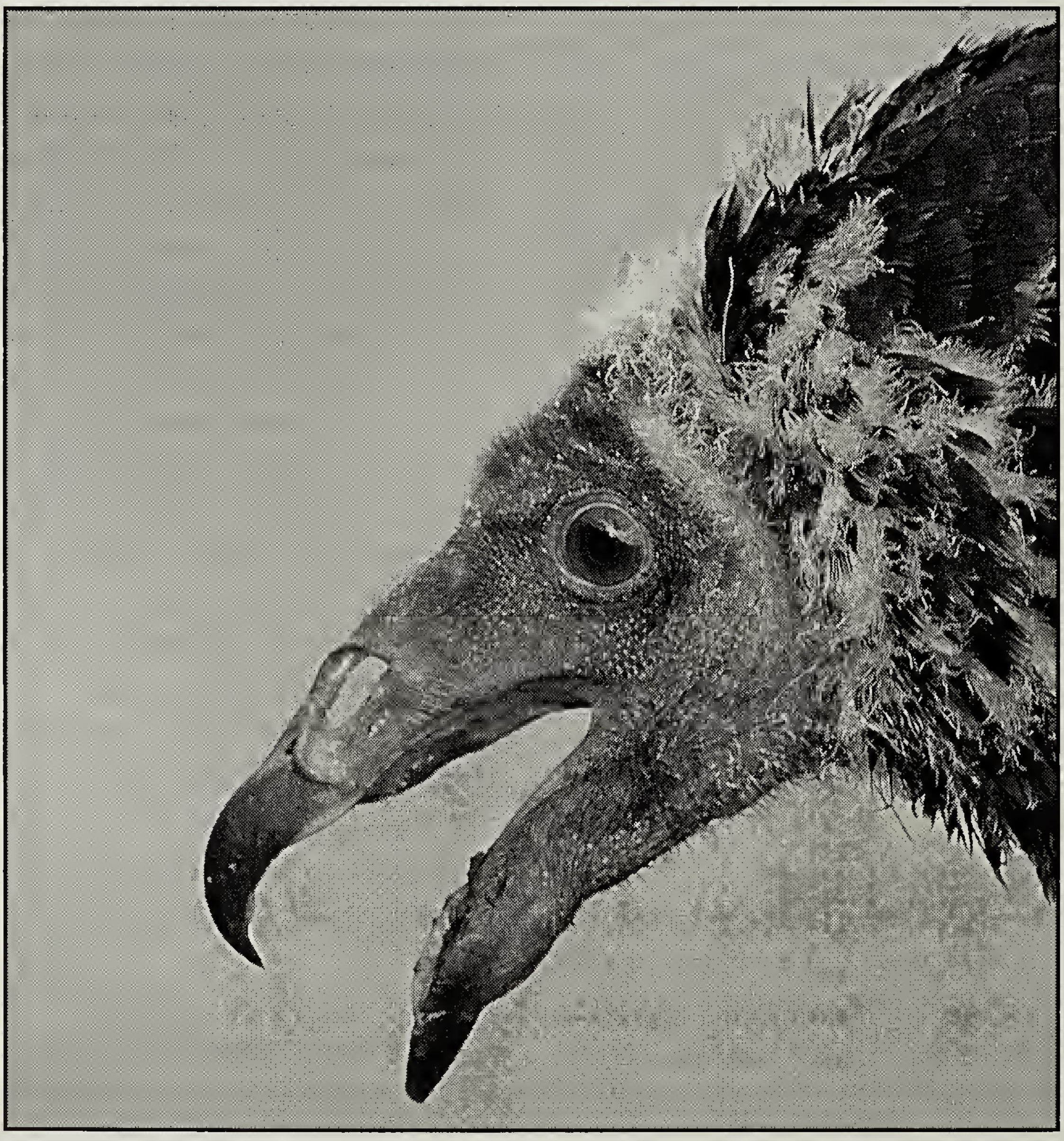

Young turkey vulture, one of a pair of youngsters being banded during August 2011. They were in the attic of an old farmhouse by the river in Saskatoon. *Nick Saunders*

WESTERN GREBES ON SOUTHERN DORE LAKE, SASKATCHEWAN

Heather Miller, Robert Gosselin

Department of Biology, University of Regina, Regina, SK.

Introduction

The western grebe *(Aechmophorus occidentalis)* is the largest grebe species found in North America. This fish-eating waterbird has black and white plumage, a long, slender neck, and a swan-like profile (Fig. 1). Western grebes breed in colonies on inland bodies of water throughout western Canada and south to Minnesota, Utah, and California, and their wintering grounds stretch down the Pacific Coast, from Alaska to Mexico. Western grebes arrive in the early spring to breed in inland lakes and wetlands where they use emergent vegetation to build floating nests.[1] It has previously been noted that western grebe breeding may be limited to water bodies that are unsuitable for human activities, as these birds are very sensitive to human disturbance, particularly early in the nesting season. Colonies have been abandoned because of excessive human disturbance.[1–3] Recently, the conservation status of the western grebe has come under review because of apparent declines in their over-wintering grounds, and little is known about their population status in Saskatchewan.

Here we describe a large and thriving colony of western grebes breeding near a town site, lodge, and popular recreational fishing area on Dore Lake, Saskatchewan. We attempted to determine the numbers of western grebes present in particular

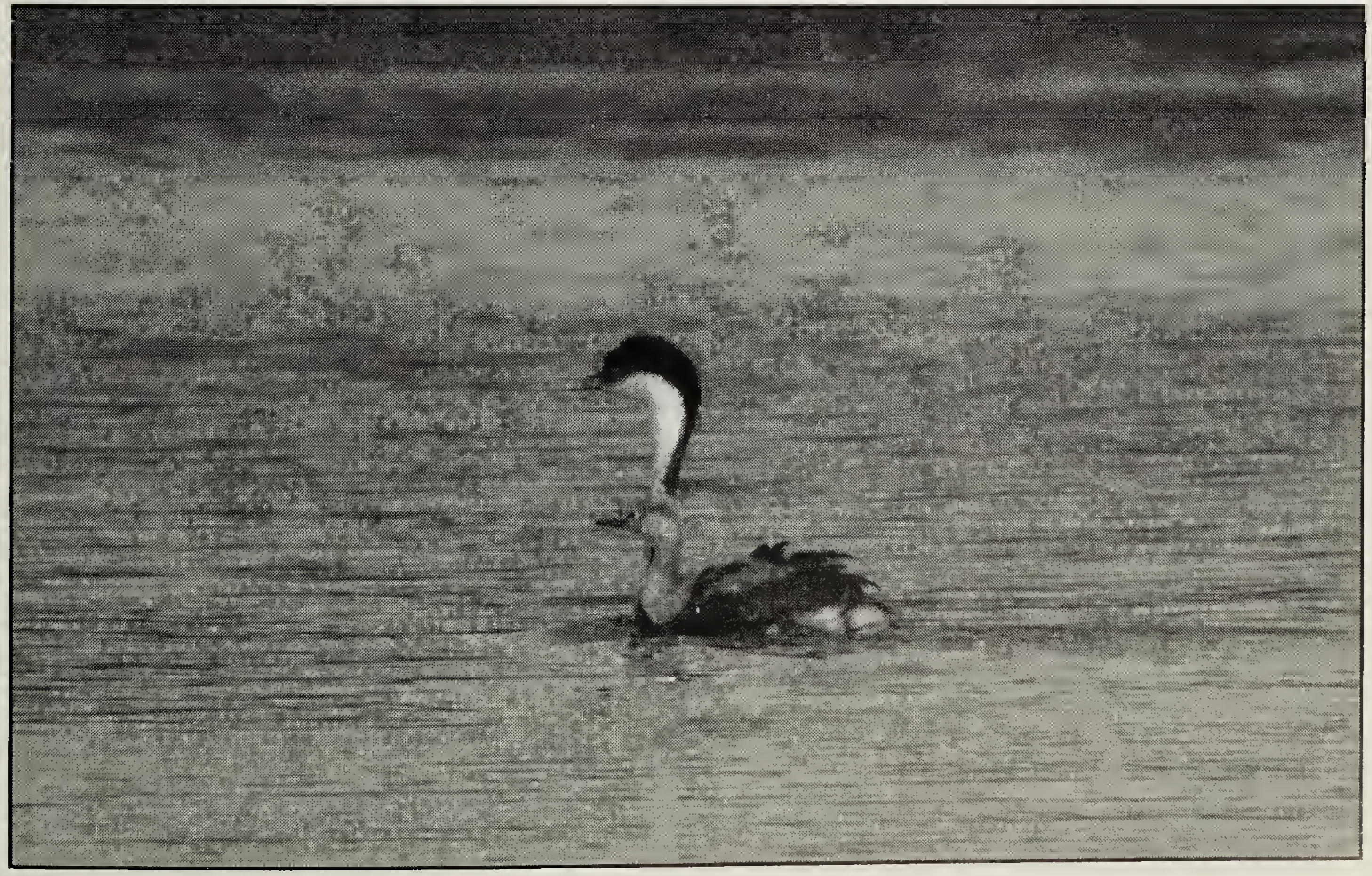

Figure 1. Western grebe from the South Bay colony, Dore Lake, SK, carrying a chick on its back. *Photo by Jennifer and Jason Doucette*

sections of Dore Lake, and to characterize some aspects of their habitat use. A basic understanding of the habitat use of western grebes on lakes with human activity may be important for appropriate conservation efforts. This is of particular importance, as the Northern Prairie and Parkland Waterbird Conservation Plan has listed this species as one of special concern.[4]

Methods

Study Site. Our study was conducted on Dore Lake, north of Big River and east of Meadow Lake, in central Saskatchewan (Fig. 2). Dore Lake is a boreal forest lake located at 54° 37' N, 107° 23' W with a surface area of 642 km^2. It has a variety of habitats ranging from wetlands to large shallow bays and deep pelagic zones, and is surrounded primarily by a boreal forest wilderness area. We located a previously unreported western grebe colony on Dore Lake at 54° 39' N, 107° 22' W on the eastern shore at the southern end of South Bay. The colony is surrounded by dense stands of emergent vegetation (rushes and cattails) that act as both the anchors for the grebes' floating nests and as protection for the colony.

In order to determine how grebes from this colony were using different areas of the lake, we divided our observed area into two parts: (1) the shallow South Bay area (depth less than 4 m) and the main lake area (maximum depth 19.5 m). We based this decision on the fact that grebes are shallow divers, and therefore they were expected to spend more time in the shallow waters of South Bay near the colony, rather than in the deeper pelagic zone of the main lake. We designated a cutoff line between South Bay and the main portion of Dore Lake at 54° 41.5' N and 107° 20' N.

Western Grebe Counts. We counted the number of grebes observed in the main lake vs. the shallow South Bay area on 13 days during 1 July to 5 August 2007. Grebe counts were made by one observer in a motorized boat traveling the same route on each date from the Dore Lake Lodge in South Bay, to a field study site in Bazil Bay (Fig. 2). We counted the number

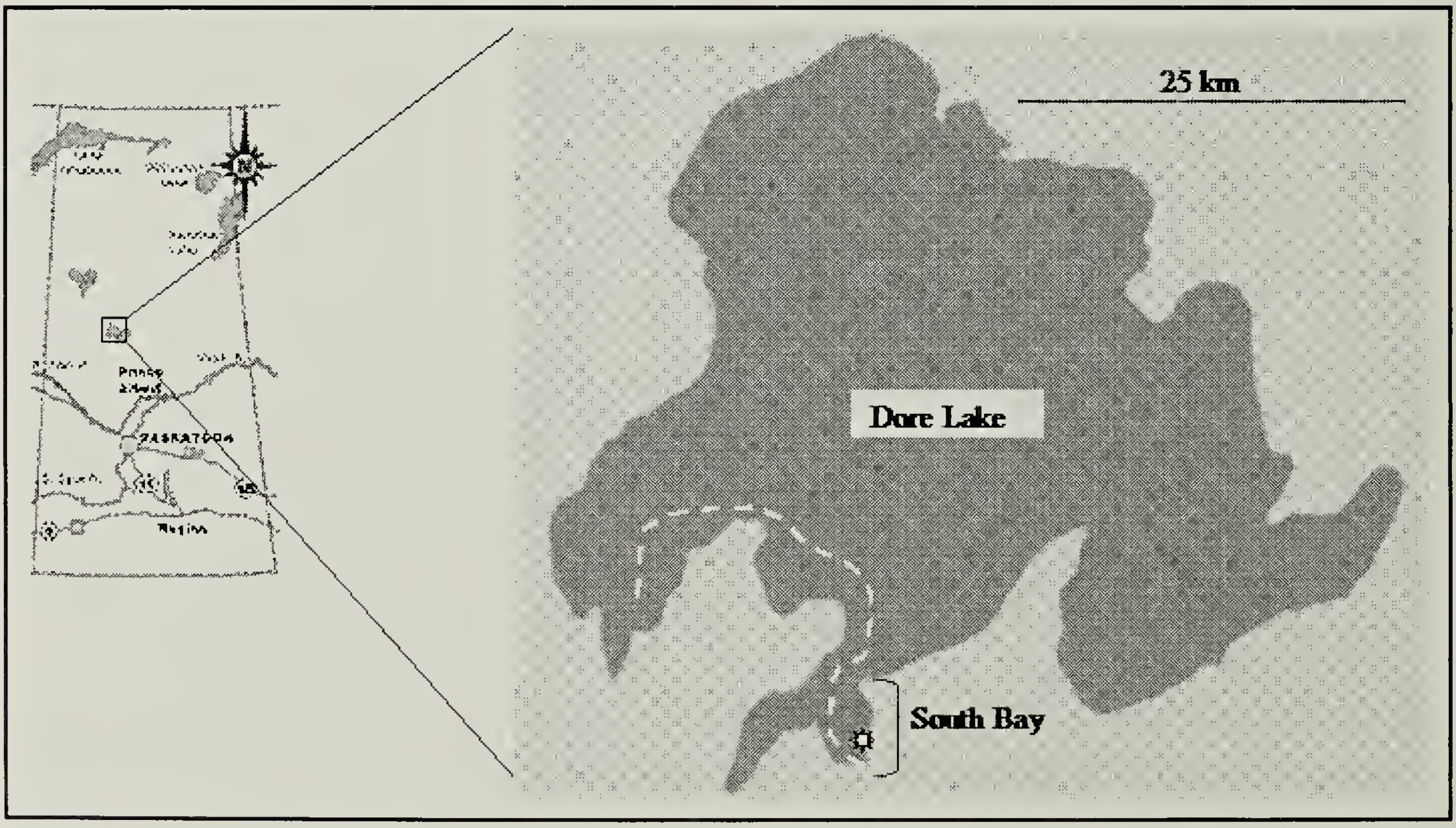

Figure 2. Dore Lake, Saskatchewan. The approximate location of the western grebe colony is indicated with a star; the route we traveled while conducting grebe counts is shown as a dashed white line.

of grebes visible on each side of the route while a second observer recorded counts and the GPS coordinates of grebes for designation as being in South Bay or the main lake. Counts were conducted during daylight hours when winds were less than 30 km/h and visibility was good. Only swimming adult grebes were counted; i.e., we did not count grebe chicks, nor did we attempt to approach the breeding colony to count adult grebes on nests or in the vegetation surrounding the colony. This was done to minimize disturbance to nesting birds. Binoculars (Bushnell 10×50) were used to count grebes near the breeding colony and in the main lake area.

Results & Discussion

Our grebe counts on each day ranged from 50 to 800 adult birds with an average of 346 ± 221.5 (mean ± standard deviation). From these counts, we could infer that there was a minimum of 400 breeding pairs, assuming that all adults were visible and were breeders, and a maximum of 800 breeding pairs, assuming that our counts were of only one member of each breeding pair. However, we expect there to be even more breeding birds than this estimated range indicates because we did not count birds actually in the colony or in other locations on the lake outside of our boating route. This colony of ≥400 breeding pairs is similar in size to the colony of over 500 breeding pairs of western grebes at Lac LaBiche, Alberta, which has been named an Important Bird Area of global significance.[5]

We found a much higher number of grebes in South Bay than in the main lake portion of Dore Lake (Fig. 3). Out of the 4500 grebes detected during our 13 counting days, approximately 95% were in South Bay, with progressively fewer birds detected as we traveled west. This suggests that western grebes preferred to spend their time in shallower waters close to the breeding colony, coinciding well with what is known about their foraging habits.[1] It would also save energy for breeding birds to spend the majority of their time in the area surrounding the

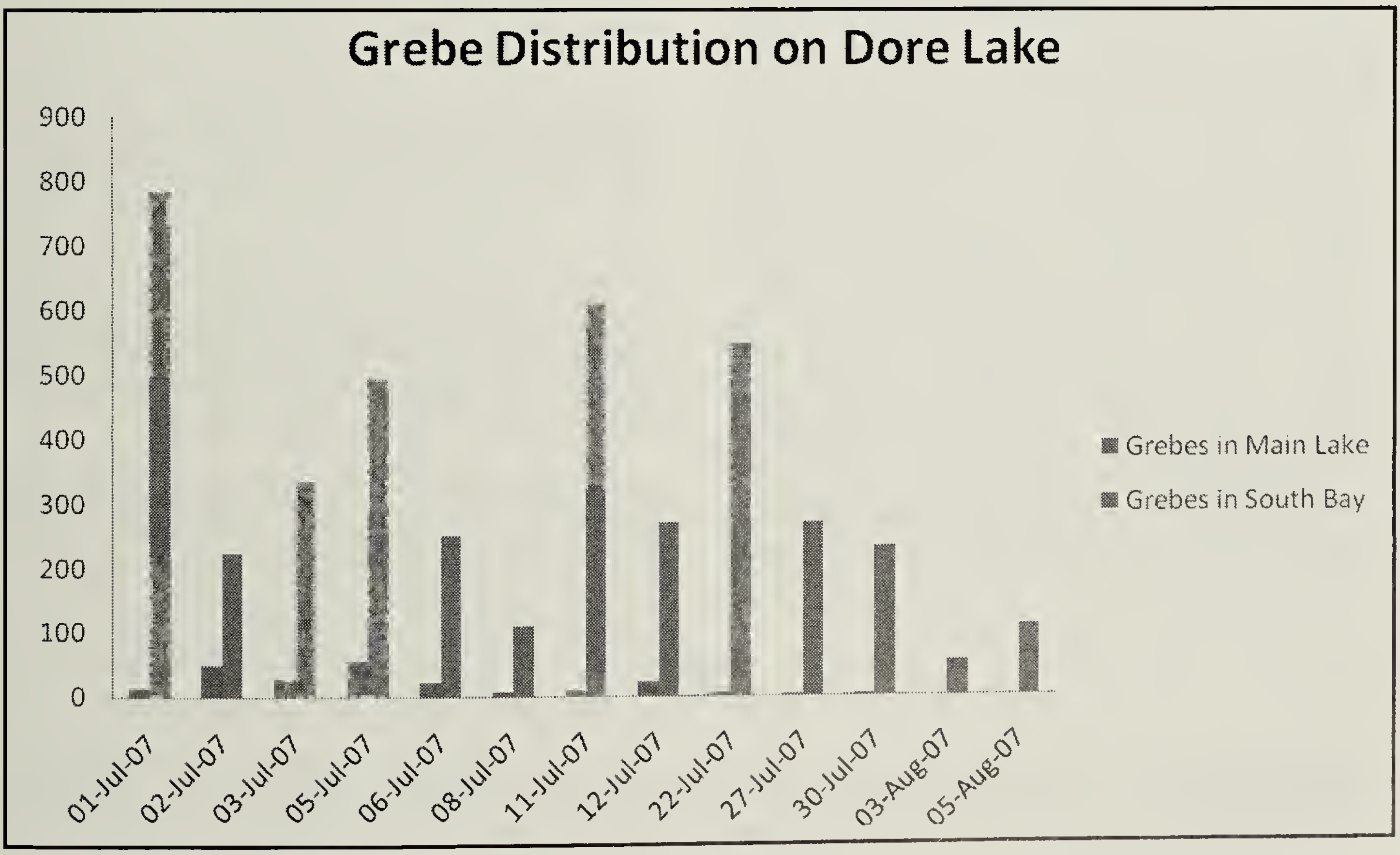

Figure 3. Number of western grebes counted in two different areas on Dore Lake on 13 days between 1 July and 5 August 2007. Counts were taken from a boat traveling along the same route each time.

colony site, especially when incubating eggs or brooding young chicks. This concentration of grebes in a small area has the potential to increase competition for prey. Thus, some individuals may opt to travel farther from the colony to forage in order to offset this competition. Future studies should compare the foraging success of western grebes found in the higher density areas in South Bay to those that forage in the main lake. In addition, we frequently observed grebes in pelagic zones on the main lake up to 10 km from the breeding colony. Future studies should attempt to determine whether these birds are associated with the South Bay colony, and what their diet consists of in deeper water.

During our study, we were also able to observe the reaction of western grebes to the approach and presence of our boat. Unlike other waterbirds, western grebes do not fly away as a boat approaches. Instead, they appeared to watch the boat approach, and then dive once we got too close. These birds would often re-surface a short distance away from the boat and appeared agitated by our presence. This diving behaviour also occurred when chicks were present, suggesting that separation of adults and young in boat traffic is a potential issue for these birds. This colony of western grebes is close to the hamlet of Dore Lake and the Dore Lake Lodge, where there is light, but fairly constant boat traffic. This location does not seem ideal given that grebes are considered disturbance-sensitive,[1] and there are vast areas of undeveloped and seldom traveled shoreline on this wilderness lake that they could have selected for a colony site. We suggest that the factors that influence western grebe colony site selection should be studied in detail, including the importance of human activities.

Acknowledgements

We would like to thank Dr. Christopher Somers for providing the opportunity to conduct this project, and Jennifer Doucette and Josanne Verhagen for assistance in the field. We thank Saskatchewan Environment's Fisheries and Wildlife Development Fund for financial assistance, and Duane and Val Schroh of the Dore Lake Lodge for use of equipment.

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* * *

ERRATUM: *Blue Jay* 69(2), June 2011, page 54: In the article entitled "Lesser scaup and raccoons: Are there links in southwestern Manitoba?" by Gord Hammell, the first sentence of the Abstract should read "Raccoons (*Procyon lotor*) invaded the southern prairie provinces of Canada during the mid-**1900s**...", not "1990s" as was erroneously printed. We regret the error.

MAMMALS

FIRST RECORD OF PREBLE'S SHREW IN PRAIRIE CANADA

Ray G. Poulin[1], D. Tim Schowalter[2]

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[2]Box 202, Delia, AB, T0J 0W0

As a group, shrews are widespread and abundant in Saskatchewan, but their secretive nature, small size, and the difficulty in catching individuals and distinguishing species has left the distribution of Saskatchewan's shrew species poorly documented. In the summer of 2008, the Royal Saskatchewan Museum initiated a study to use the contents of owl pellets to document the distribution of small mammal species across southern Saskatchewan. Through this project, the identity and location of tens of thousands of small mammals have been documented. From one of the very first pellet samples collected, we found the remains of a Preble's shrew (*Sorex preblei*). This is the first record of this species from the Canadian Prairie provinces. The specimen has been added to the collections of the Royal Saskatchewan Museum (RSM #20300).

The appearance of a Preble's shrew is very typical of a *Sorex* species; it tends to have grayish pelage on the back and silvery pelage on the undersides.[1] It has a long pointed snout and small eyes. Although size is difficult to use as a diagnostic feature, Preble's shrew is a very small species, even for a shrew. Ranges of measurements include: 77–95 mm (total length), 28–38 mm (tail), and a mass of 2.1–4.1 g. As a comparison, the cinereus shrew (also known as the common shrew, *S. cinereus*) has measures of: 83–100 mm (total length), 29–41 mm (tail), and a mass of 2.5–6 g.

As with most species of shrews, the best way to identify a Preble's shrew is through careful cranial measurements. Carraway (1995) published a detailed account of the measurements necessary to distinguish shrews by their mandibles.[2] Based on more obvious characteristics, the mandibles we discovered could have only been from Preble's shrew or a prairie shrew (*S. haydeni*). According to Carraway (1995), compared to the mandibles of a prairie shrew, the mandibles of a Preble's shrew have a shorter height of the coronoid process (<3.2 mm) and shorter distance between teeth c1 and m3 (<4.1 mm).[2] In the specimen we found, the coronoid process measured 2.7 mm and the length of c1 to m3 was 3.3 mm (Fig. 1; see also inside back cover, bottom). To further our confidence in our diagnosis of a Preble's shrew, we sent photographs of the mandibles to Dr. Carraway at Oregon State University. Dr. Carraway's conclusion was that the specimen is from a Preble's shrew "based on the angle of the i1, straight anterior edge of the coronoid process, and the depth of dentary beneath m1 (about the same as height of the m1)".

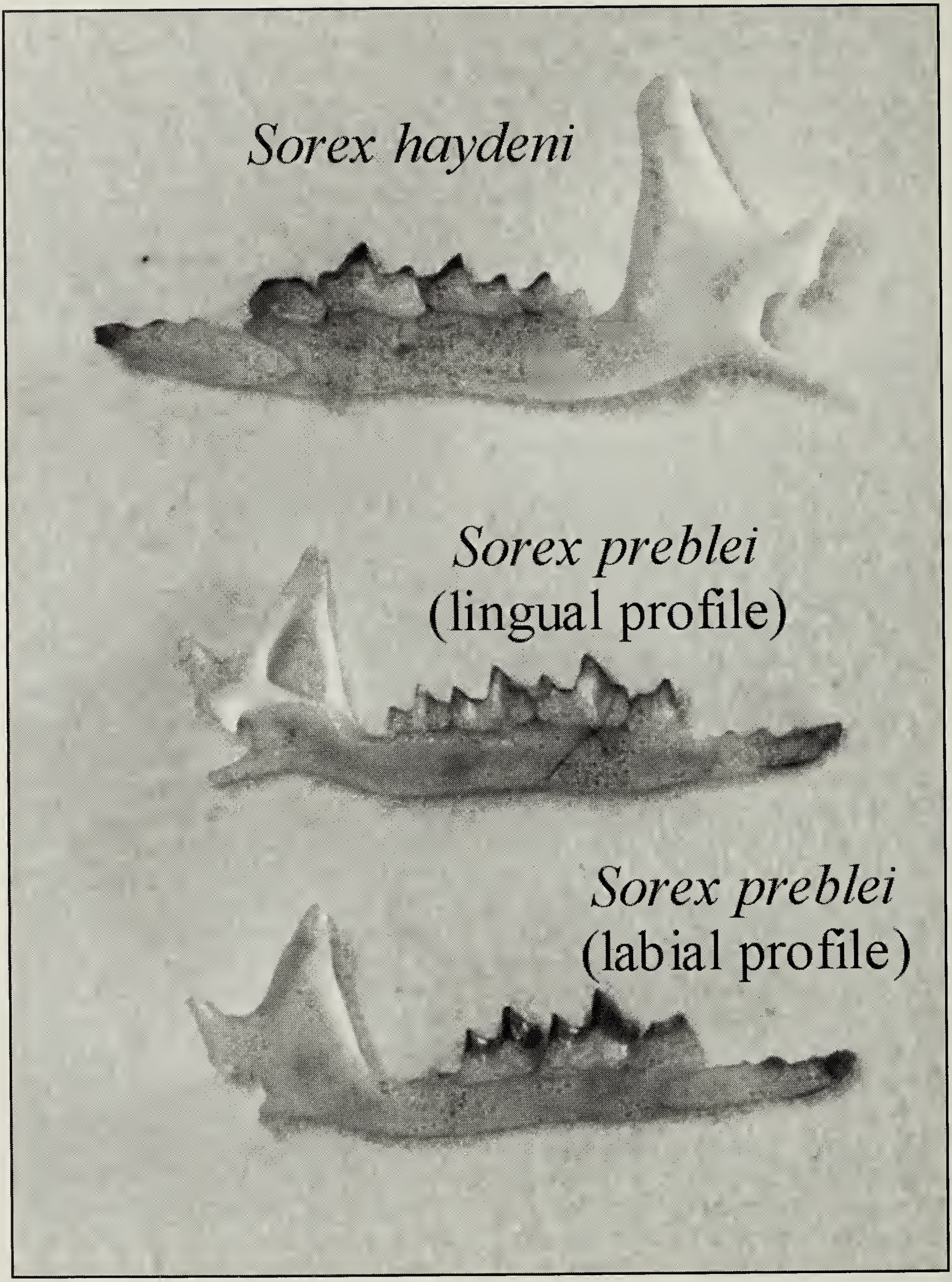

Figure 1. Comparison of a mandible from a typical Sorex haydeni *(top) to the* S. preblei *mandibles described in this paper (centre and bottom).*

We cannot determine in which microhabitat the shrew was living when it was captured or the time of year that it was captured. The great horned owl pellets that contained the mandibles were collected from a small farm building on the Val Marie PFRA pasture on 25 April 2008, about 16 km northwest of the town of Val Marie, SK. The site had obviously been used as an owl roost for quite some time, as there were many dozens of pellets scattered throughout the area. From the pellets collected at that site on that day (and we did not collect all of them), we recorded 423 individual small mammals (mostly mice, shrews, and voles). The home range of great horned owls on short-grass prairie can approach 1000 ha or more.[3] The habitat within 2 km of the owl roost included a treed farm yard, native grass pasture (dominated by *Stipa comata*, *Bouteloua gracilis*, and *Agropyron smithii*), irrigated hay fields (dominated by alfalfa), steep coulee slopes (dominated by *Juniperus horizontalis*, *Chrysothamnus nauseosus*, and *Artemisia fridiga*), a reservoir, the Frenchman River, and dense stands of shrubs along the riparian areas of the river.

Although this is the first record of this species from the prairie provinces, the find is not completely unexpected. A specimen was captured in the Frenchman River Valley in Montana, 82 km south of the collection location of our specimen (and 25 km south of the Saskatchewan–Montana border). It is also possible, if not probable, that Preble's shrews are found in other parts of southern Saskatchewan, but they have yet to be discovered. There is a record of a Preble's shrew captured only 13 km south of the Saskatchewan–Montana border, south of the town of Minton, SK. As with so many of our less charismatic species in Saskatchewan, there is much work to be done on even the most basic understanding of their natural history.

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* * *

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MAJOR SLUMP EVENT AT GRASSLANDS NATIONAL PARK SNAKE PIT IN SOUTHWESTERN SASKATCHEWAN

Laura E. Gardiner[1,2] and Kendall W. Sonmor[3]

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Introduction

The availability of suitable winter hibernacula for snakes is critical to their persistence at higher latitudes.[1-4] Southwestern Saskatchewan is home to multiple snake species living at the northern extent of their geographic range in North America. These snakes rely on unstable slump zones, mammal burrows, rock crevices, and abandoned cisterns to provide suitable over-wintering sites that enable them to survive the harsh winter.[5,6] It is common to find more than one species hibernating together at communal hibernation sites, which may be a response to limited availability of suitable locations for over-wintering. Communal hibernation places large numbers of snakes of multiple species together at single locations for prolonged periods when they are immobile, and therefore highly vulnerable. Disturbance or destruction of over-wintering sites by natural or anthropogenic factors may cause significant reductions in population size, especially for species that are already rare, such as the eastern yellow-bellied racer (*Coluber constrictor flaviventris*).[7] Here we describe occlusion of hibernaculum openings due to natural erosion, and potential loss of 'Snake Pit', one of the largest and most important over-wintering sites for snakes in Grasslands National Park, Saskatchewan.

Study Site

The Frenchman River Valley in southwest Saskatchewan was formed by glacial melt-water.[8] Landslides, or 'slumps', are the dominant process of valley widening, and are common along melt-water valleys and tributaries.[9] The Frenchman River Valley is 80 m shallower and almost three times as wide as the original melt-water channel due to the accumulation of landslide debris.[8] Slumping along unstable slopes creates terraces containing slight depressions or sinkholes, fissures or small faults, and loosely packed soil that attracts burrowing mammals.[4] These factors provide plentiful opportunities for snakes to find refuge below the frost line, making unstable slump zones a common location for winter hibernation sites in the area.

'Snake Pit' is a well-known hibernaculum located in the Frenchman

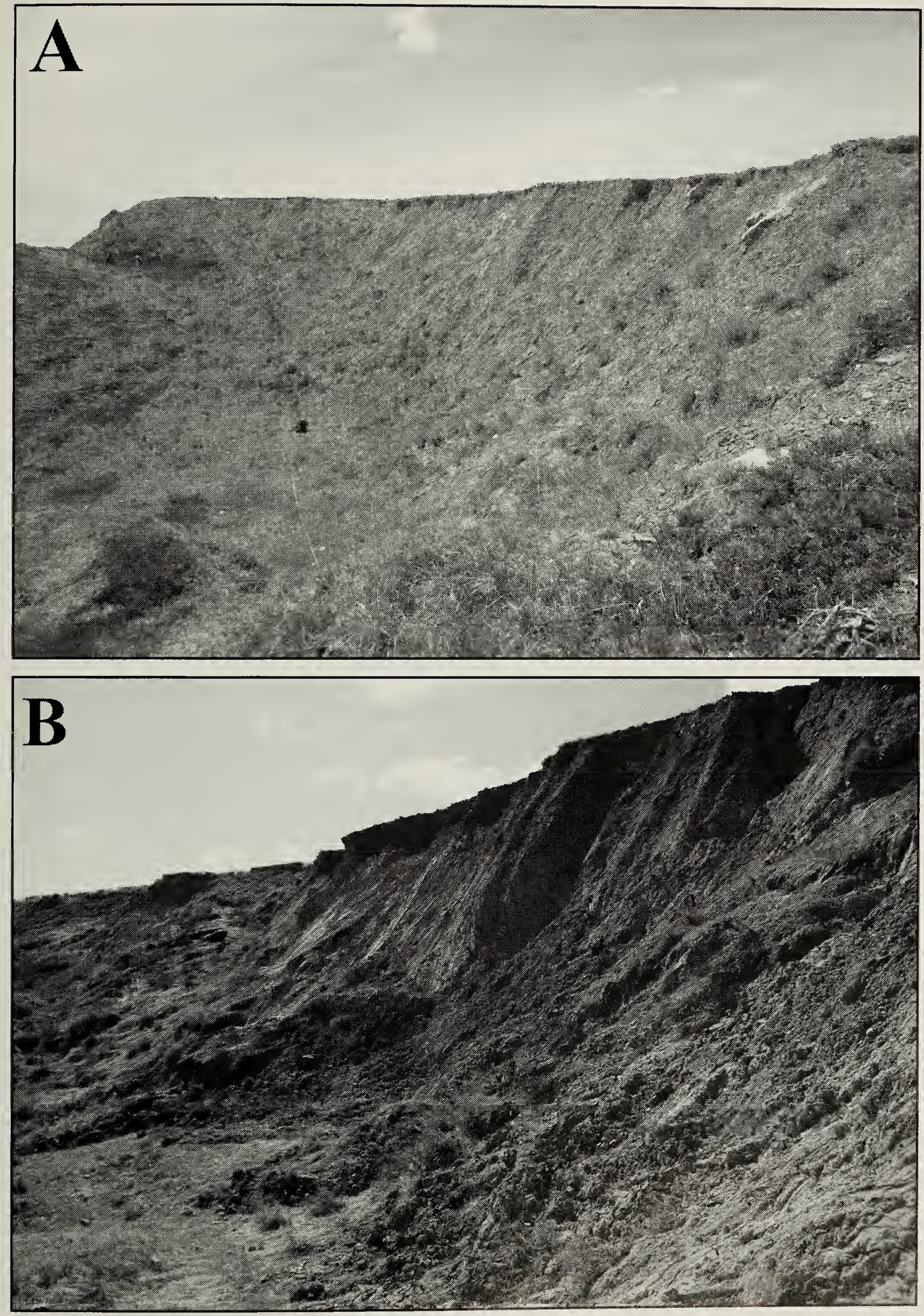

Figure 1. Snake Pit hibernaculum in Grasslands National Park, SK, (A) before (May 2010) and (B) after (May 2011) the slump event along the back slope. The resulting debris occluded den entrances prior to typical spring emergence, trapping snakes in the hibernaculum. Photos by Laura Gardiner (A) and Danae Frier (B)

River Valley in Grasslands National Park, Saskatchewan. It is an established slump-based hibernaculum inhabited by prairie rattlesnakes (*Crotalus viridis*), plains garter snakes (*Thamnophis radix*), eastern yellow-bellied racers, and bullsnakes (*Pituophis catenifer sayi*). Historically, the site has been subjected to instability due to both natural and anthropogenic disturbances. This site is the largest active snake den in the Val Marie area, known to contain large numbers of rattlesnakes since the establishment of the local community (K. Grant, Parks Canada, pers. comm.). It has also been recognized in several major reptile surveys in the area dating back to the late 1980's.[10,11] In the past, humans have attempted to eliminate snakes at Snake Pit using a variety of methods. These include use of dynamite to destroy dens, vandalism by shotgun, and physical mutilation resulting in observations of headless and rattle-less snakes.[10,12] The snakes at this location were formally protected under federal law within Grasslands National Park in 2001.

Erosion Event at Snake Pit in 2011

In the spring of 2011, Snake Pit was seriously damaged by a large slump event that was triggered by soil saturation (Fig. 1b). Excessive water in the soil caused a large amount of sediment to slide down the back slope of the den coulee, covering previously existing entrances to hibernation sites. There were previously at least 10 active entrance holes at this site.[10] Along the back slope where the slump occurred, at least six holes were observed in 2010. After the slump event, only one hole was observed on the slope. The slump extended from the top of the slope to the bottom and was estimated to be 120 m across; there was approximately 2 m of debris deposited at the bottom of the slope (Fig. 2). The slumping occurred in early April, about a month before typical spring emergence, and likely trapped snakes inside of the hibernaculum.

In early May 2011, fewer snakes than usual were observed during research activities at Snake Pit, and many of the snakes that were observed were covered in mud. A remote motion-detecting camera was set up on the single remaining hole from 3 to 16 May. Review of the images revealed at least one rattlesnake using this hole. During the spring den survey following the slump in 2011, a maximum of 4 racers were caught per day, while surveys in 2010 had resulted in up to 16 racers per day at Snake Pit. Slumping also occurred to various extents at or near four of seven other known hibernacula within Grasslands National Park, although no other site experienced slumping to the same scale or level of destruction as was observed at Snake Pit.

Discussion

The eastern yellow-bellied racer, an inhabitant of the Snake Pit hibernaculum, is a COSEWIC-designated Threatened species in Canada, with a known range confined to the Frenchman River Valley and Big Muddy Valley in southern Saskatchewan, and the Milk River Valley in southeastern Alberta.[5,6,13] As of 2011, Snake Pit contained the largest known population of racers in Canada, and was therefore a very important site for this species.[5,13] Mark–recapture estimates using the Lincoln-Peterson formula (four recaptures of 40 previously marked snakes in a sample of 17 snakes caught in 2011) suggest a 50% decrease in the racer population at Snake Pit from 2010 to 2011 (J. Martino, L. Gardiner, unpublished data).[13] The slump event may represent an important loss of individuals from the largest known population of eastern yellow-bellied racers in Canada. The event may have similarly affected other species using this den, although we have

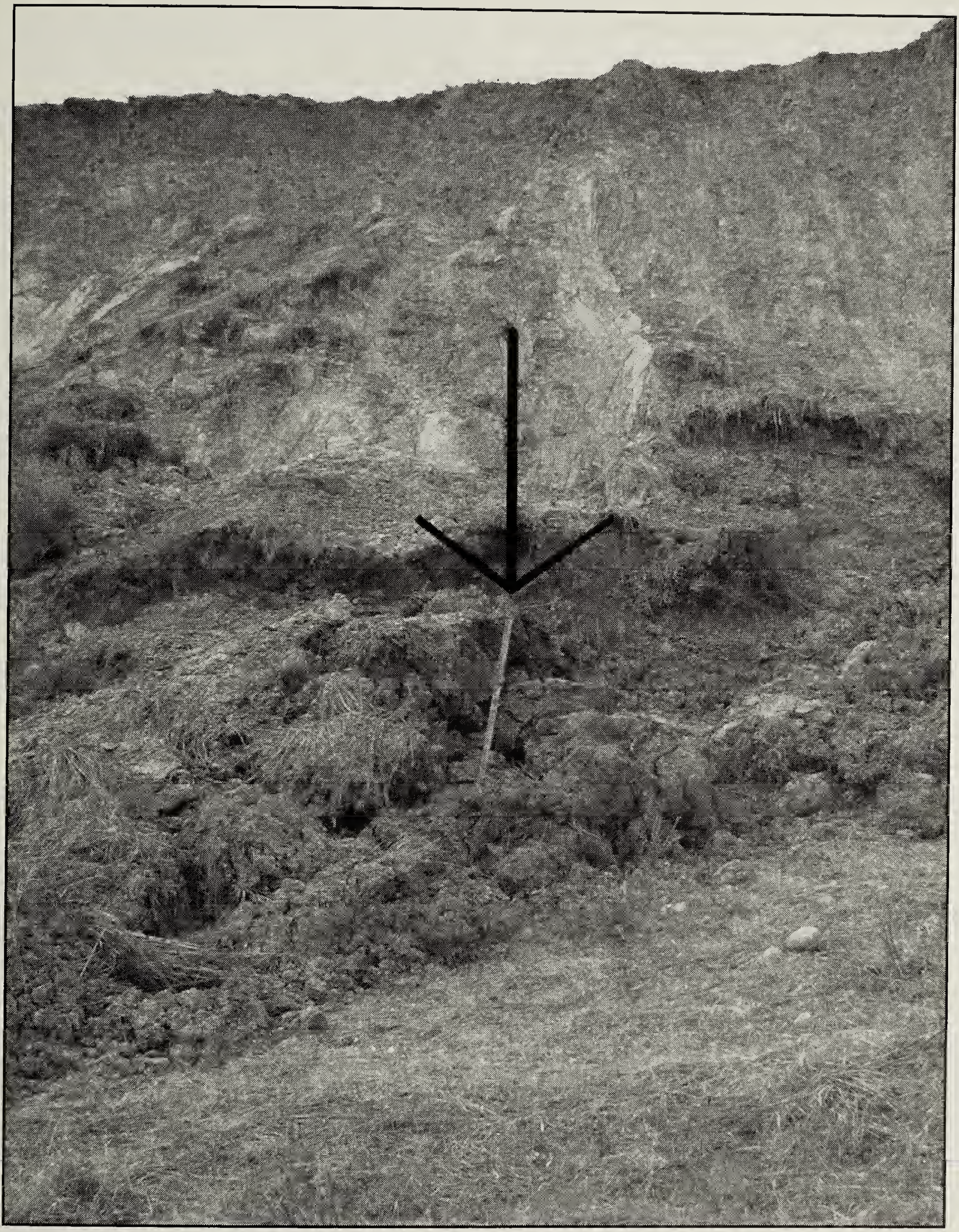

Figure 2. Metre stick (arrow) showing the amount of debris that slumped at Snake Pit. The slump was estimated at 120 m across resulting in 2 m of debris deposited at the bottom of the slope. *Kendall Sonmor*

minimal data on the magnitude of this effect.

Large mortality events in small peripheral populations, such as those of snakes in southern Saskatchewan, have the potential to cause extirpation and genetic isolation, making them more susceptible to environmental perturbations.[6] As such, the potential decimation of the largest known population of racers in Canada may have negative consequences for the management of this Threatened species. At this time, additional search effort is needed to locate more racer dens in Canada in order to fully understand the conservation significance of this event to the species. The implications of this event to the other species concentrated at this site are currently unknown and warrant additional research.

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* * *

Man's heart away from nature becomes hard.

- Standing Bear

INSECTS

NEW DISTRIBUTION RECORD FOR WATER SCORPIONS (*HEMIPTERA: NEPIDAE*) FROM ALBERTA

Curtis Farrus[1], Vytenis Gotceitas[2]

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During a field trip with students enrolled in the 'Environmental Monitoring and Protection' course at Lakeland College, Alberta, to the Alberta side of Cypress Hills Interprovincial Park, a water scorpion specimen (*Ranatra fusca* Palisot) was collected while sampling for aquatic invertebrates in Spruce Coulee Reservoir on 24 September 2011 (Figs. 1 and 2). This not only represents a first record of this genus and species of aquatic Hemiptera in Alberta, but also of any member of the Family Nepidae (K. Fry, Entomological Society of Alberta; D. Shpeley, University of Alberta; G. G. E. Scudder, University of British Columbia, pers. comm.).[1] Collection of this specimen brings the number of identified families of aquatic Hemiptera in Alberta to nine.[1]

Ranatra fusca has been reported as being the most widespread and common species of *Ranatra* in North America.[2] Distribution maps for *R. fusca* published by Sites and Polhemus (1994) indicate the presence of this species in southern Alberta;[2] however, as these authors themselves state with regard to these distributional maps: "In some instances, entire areas have been shaded regardless of whether or not a particular species has been recorded from every part of each region included. Although isolated state or provincial records may be nonexistent, these species probably do occur in most of the shaded areas where suitable habitat is found." Prior to the collection of our specimen, in Canada, specimens of *R. fusca* have been collected from Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, and British Columbia.[3,4] In the United States, *R. fusca* has been recorded throughout the northern states and south to North Carolina and Kansas, and along the west coast south and around to Texas.[2]

All members of the family Nepidae have two long, slender, caudal filaments that fit together to form a breathing tube, with which the animal obtains atmospheric air by pushing the tip of the tube through the water surface.[5] Nepids are predators, and the forelegs are modified for striking out and seizing prey, while the middle and hind pairs of legs are used to cling and move about on aquatic vegetation.[4,5] Nepids are ambush predators, which typically sit motionless, or move about slowly, on aquatic vegetation.[2] Members of the genus *Ranatra* are reported to typically be found in lentic systems in association with aquatic vegetation.[2,4] *Ranatra* spp. have five larval instars, and the eggs, larvae, and adults all live in the water. *Ranatra* spp. have a thin, narrow, elongate body (i.e. adult *R. fusca* ≥50 mm in length from head to tip of respiratory tubes),[2] which along with a typical brownish colouration and their habit of sitting motionless, or moving about slowly, gives them the appearance of a piece of dead vegetation (Fig. 2). Specimens of *Ranatra* are known to demonstrate death-feigning behaviour, making them appear very sticklike and, therefore, difficult to detect in a sample.[2] When material collected by sweeping a dip-net through the vegetation is placed in water, as was the case in our sampling (i.e. white plastic basin), much of the plant material sinks while specimens of *Ranatra* often float to the surface or start to move, at which time they are more readily detected.

Our specimen of *R. fusca* was collected from a well-vegetated shoreline habitat (i.e. emergent and submergent aquatic vegetation) in Spruce Coulee Reservoir (49° 40' 42.85" N, 110° 11' 5.01" W), just below the campsite in Cypress Hills Interprovincial Park (Fig. 1). The nearest other Canadian collection record to ours is in Saskatchewan from the Wood River near Gravelbourg (49° 54' 07" N, 106° 29' 48" W), approximately 275 km east of Spruce Coulee Reservoir.[4] Adult *Ranatra* are winged and are known to disperse nocturnally among suitable water bodies.[2] Therefore, the specimen of *R. fusca* collected in Spruce Coulee Reservoir

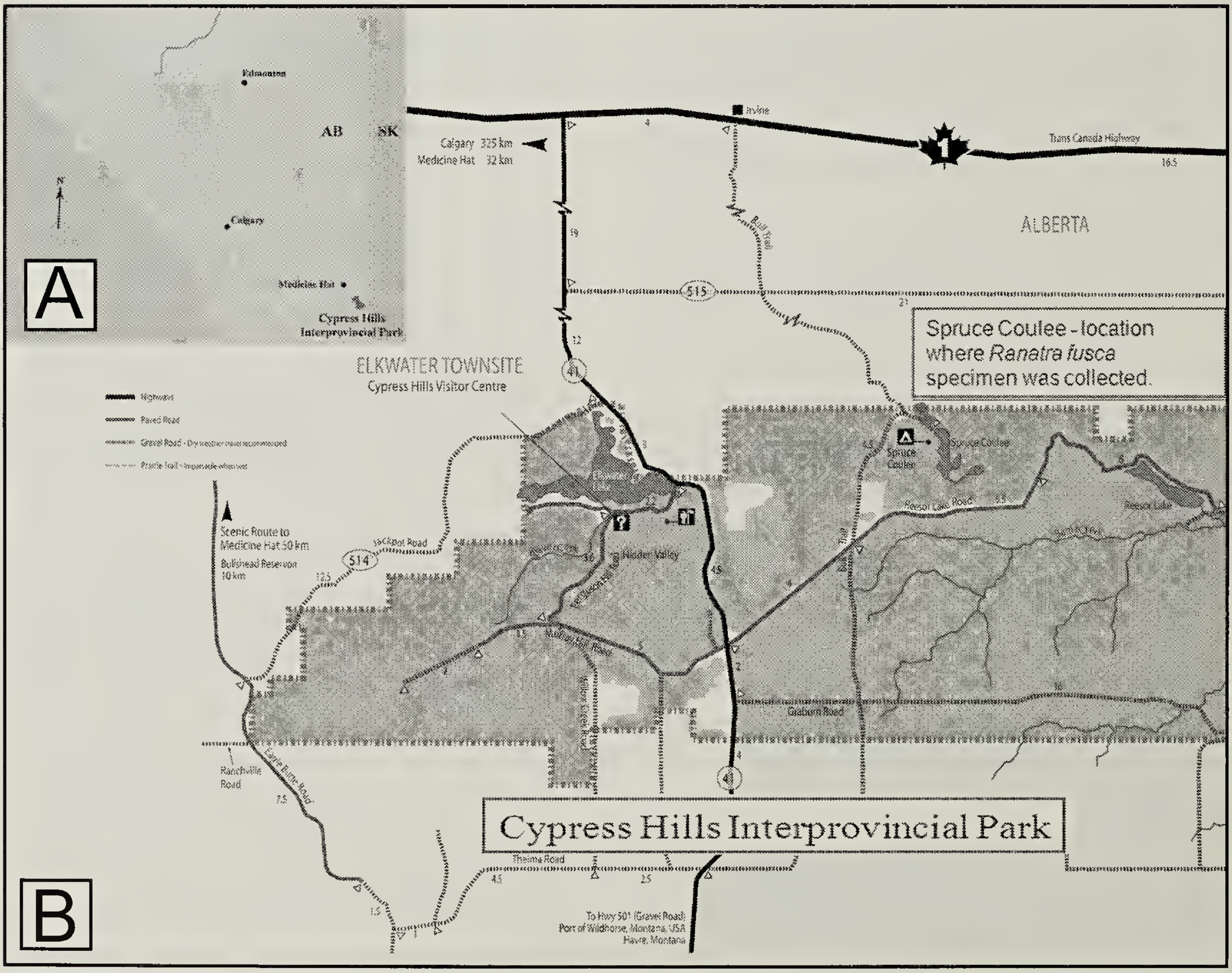
A
Edmonton
AB
SK
N
Calgary
Medicine Hat
Cypress Hills Interprovincial Park
Calgary 325 km
Medicine Hat 32 km
Irvine
1
Trans Canada Highway
ALBERTA
515
Spruce Coulee - location where *Ranatra fusca* specimen was collected.
41
ELKWATER TOWNSITE
Cypress Hills Visitor Centre
Highways
Paved Road
Gravel Road - Dry weather travel recommended
Prairie Trail - Impassable when wet
Scenic Route to Medicine Hat 50 km
Bullshead Reservoir 10 km
Jackpot Road
514
Spruce Coulee
Reesor Lake Road
Reesor Lake
Hidden Valley
Graburn Road
Ranchville Road
Cypress Hills Interprovincial Park
Thelma Road
To Hwy 501 (Gravel Road)
Port of Wildhorse, Montana, USA
Havre, Montana
B

Figure 1. (A) Location of Cypress Hills Interprovincial Park in Alberta. (B) Site where a specimen of Ranatra fusca *was collected in the park (i.e. Spruce Coulee).*

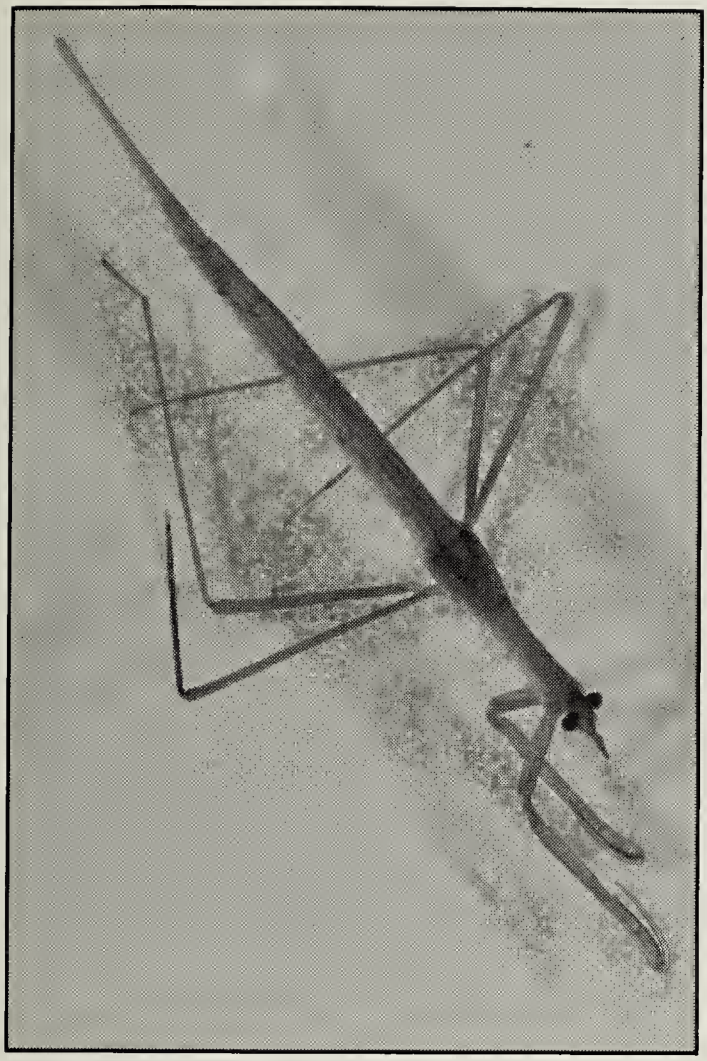

Figure 2. Photograph of the actual specimen of Ranatra fusca *collected in the park.* *Jim Zadorozny*

could have been a transient. However, the specimen we collected was an immature, fourth-instar larva (G. G. E. Scudder, pers. comm.), and as such did not have fully developed wings at the time of collection. The presence of an immature specimen of *R. fusca* in Spruce Coulee Reservoir would suggest that there is an actual breeding population of these animals in this system.

Acknowledgements

We thank the following individuals for their assistance in determining that our specimen is indeed a new record for Alberta: Dr. G. G. E. Scudder (Department of Zoology, University of British Columbia), K. Fry (Secretary of the Entomological Society of Alberta), and D. Shpeley (University of Alberta). In addition, we extend our sincere thanks to Dr. Scudder for his assistance in verifying the identification and instar of our specimen. We also thank P. Swain (District Manager, Cypress Hills District) for giving us permission to use the map of Cypress Hills Interprovincial Park in Fig. 1, and P. Walsh for reviewing the manuscript. This work was conducted as part of 'Bioassays and Biomonitoring' (BI 405), a course offered in the Environmental Monitoring and Protection program at Lakeland College, Vermilion, Alberta.

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* * *

I cannot endure to waste anything so precious as autumnal sunshine by staying in the house.

- Nathaniel Hawthorne

NOTES AND LETTERS

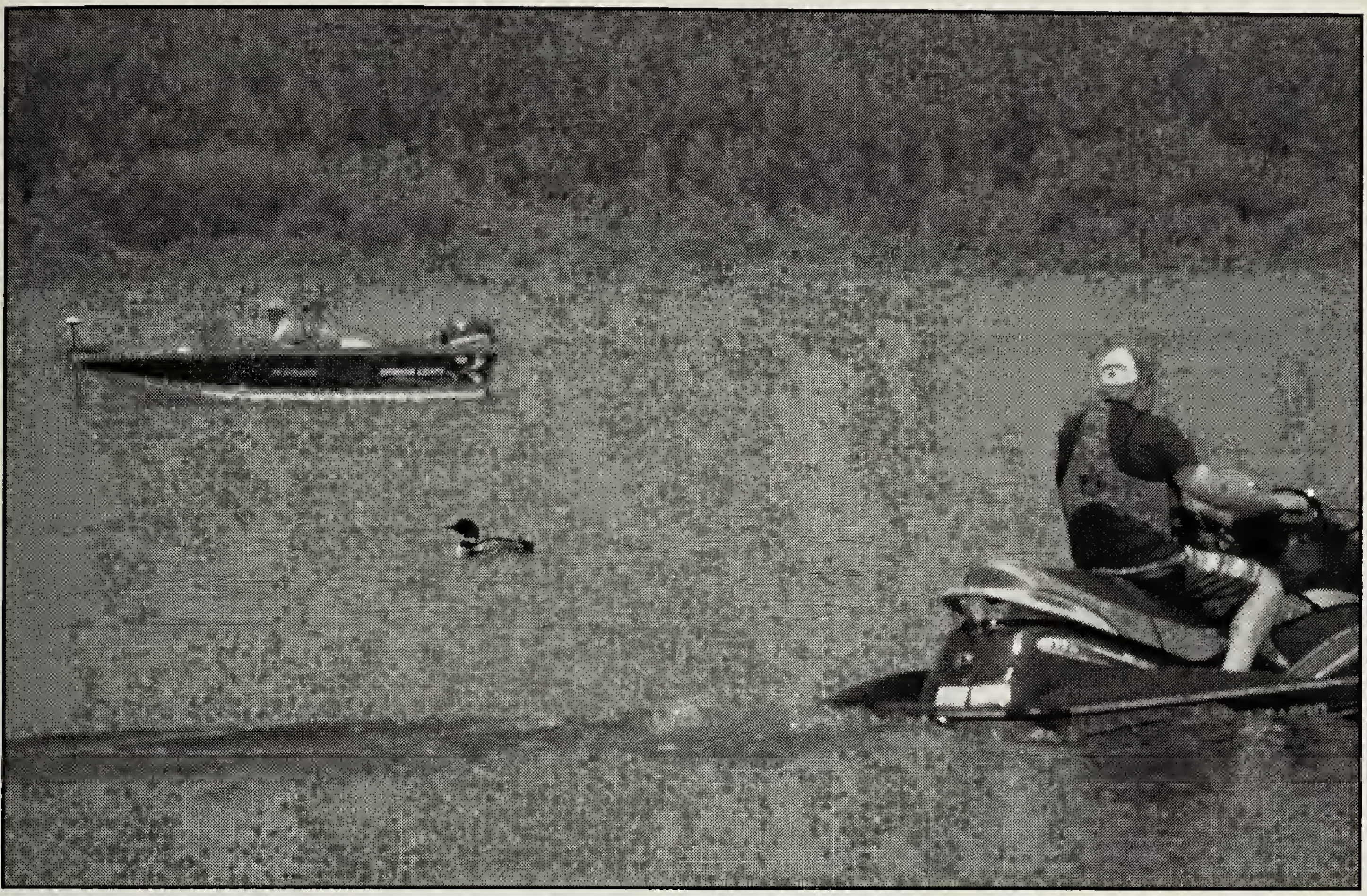
COMMON LOON EXPERIENCES AT ANGLIN LAKE, SK

I have lived over half of my 88-year lifetime at Anglin Lake, SK. Here I assist Warren and Evelyn Hoffman of Humboldt with their annual Loon Count. I am proud that, for its size, only 1534 ha, Anglin has the largest concentration of breeding common loons (*Gavia immer*) of any Canadian lake surveyed by the Canadian Lakes Loon Survey. With an average of 36 pairs, 1991–1999, Anglin Lake loons raised a record 60 young in 1995. We watched them from their arrival – in 2008 on May 2 – until the last one departed on November 10.

Two aspects of their anatomy make loons different from ducks. The loon must run along the water, into the wind, before it can become airborne; on a calm day, it might take several hundred meters for a loon to gain flight. One morning in late November, I awoke to find Jacobsen Bay closed in with clear, shining ice following a very sharp overnight frost. We studied the only open water, a dark green patch near the islands across the lake. It was occupied by six goldeneye ducks (*Bucephala* sp.) and a single common loon. The open water was only 40 or 50 feet in diameter. We watched with binoculars as the loon made two attempts to take off, but before it was airborne, its attempted takeoff merely sent it sliding along the ice like a curling rock. It pushed with its feet along the ice, slowly and laboriously, to get back to the open water.

At this point, we dressed warmly and mounted our rescue mission. We put two wooden paddles and two 4-foot lengths of electrical conduit pipe in the canoe and hoped for an easy trip sliding along the smooth ice. Twenty-five feet from shore, the canoe broke through and so we had to break ice ahead of us across the entire width of the lake. As we approached the open water, the ducks took off while the loon called wildly and then dove. When we reached the open water, the loon surfaced, called, and directed its long takeoff run along the narrow path of open water we had just created. The loon was fortunately directed exactly into the wind, careening off the floating ice blocks that marked its patch. When it reached flying speed, it circled and called – we thought triumphantly. We felt adequately rewarded for our 2 hours of heavy exertion.

The second aspect of loon anatomy is the placement of their feet, far back on their body. This allows them superb diving skills but makes them very clumsy on land. I drove on Highway 952 towards Christopher Lake and Highway 2. Just over the first hill from our resort, I saw a dark object moving slowly across the paved highway. It was a loon, moving with great difficulty. A half-ton truck approached, so I flagged it down. The Finnish gentleman who operated the La Ronge airport agreed to help me rescue this loon, since we did not wish to leave it there in the ditch to die. I took my plastic overalls from the trunk of my car and threw them over and around the loon, which remained amazingly placid. I picked up the loon with no difficulty, but each of us was alone and headed in opposite directions. What could we do? Neither of us could drive while holding the bird. Doctor Powell fortuitously came along and offered to take the loon to his cottage at Waskesiu. His wife drove, while the doctor held the loon in his arms all the



At Loon Lake, SK, a common loon, caught between a motor boat and a personal water craft, appears unfazed. *Victoria Kjoss*

way, and then released it into Waskesiu Lake, where it swam into deeper water and dove several times. Later I read in *Loon Magic*, by Tom and Pat Klein, how loons sometimes perceive a stretch of wet asphalt highway as a stretch of water and attempt to land on it.

The natural curiosity of loons at Jacobsen Bay, Anglin Lake, has allowed us to study them in their natural habitat. A pair has nested on a tiny island in a very quiet bay for the past 15 years. I have watched them on and around their nest, turning their eggs and changing places to incubate. The presence of my Samoyed dog in the canoe does not seem to bother them. Later, after hatch, both young ride on the back of one parent only. Our large tour boat piques their interest, and they often swim quite close.

I thank Dr. Stuart Houston for his encouragement and assistance, and Warren and Evelyn Hoffman for their annual loon count data.

- Jack Greening, PO Box 4, Christopher Lake, SK, S0J 0N0

* * *

Look deep into nature, and then you will understand everything better.

- Albert Einstein

SLUGS AS A CONTROL MEASURE FOR BURDOCKS AT THE PAS, MB?

The common burdock (*Arctium minus*) arrived here in 1961. The first plants were found along the Saskatchewan River at Rall's Island, near The Pas, MB. I have deposited specimens in my herbarium. For many years, this species was scarce. Some 30 years later, another invasive species, *A. tomentosum*, the downy burdock, arrived in The Pas area and is now becoming common locally. *Arctium minus* is very infrequent at present, whereas *A. tomentosum* is very abundant and a plague on cattle in the valley west of town. The underbellies of bulls become plastered with the seed heads so that they interfere with the spring cattle breeding.

Arctium tomentosum is now common along the river in Devon Park in town, where it is rapidly taking over the wet clay shoreline. It seems to have no control enemies as yet, although in two gardens in town the large basal leaves are heavily eaten by slugs, which first appeared here in the 1970s. A second likely predator is a *Papiapema* moth that feeds on the roots during its caterpillar stage. Two such moths came to my mothing lights at night – a recent arrival, though they failed to appear in 2009 and 2010.

The flowers of both burr species are heavily visited by bumblebees (*Bombus* spp.), as well as a few megachilid bee species.

- Walter Krivda, PO Box 864, The Pas, MB, R9A 1K8

◆

Bucket o' Babes: burrowing owl (Athene cunicularia) *chicks huddled at the bottom of a pail. These chicks were captured in 2008 near Rouleau, SK, as part of an ongoing monitoring program.*

Adam Crosby

OBSERVATION OF RED SQUIRREL MATING BEHAVIOUR

An incident of mating behaviour by a pair of red squirrels (*Tamiasciurus hudsonicus*), though only observed for about 5 minutes by my wife, Ruth, and myself, seems worth recording. It is certainly something I have not previously seen. This took place in our Charleswood (Winnipeg, MB) yard on 24 February 2010, with the temperature at –20°C. We have no way of knowing when mating behaviour and copulation in this pair began, but I suspect that it was some time earlier and almost certainly some distance from where I first saw them.

I called Ruth to the window at about 17:41 h to see a pair of red squirrels copulating in the middle of our driveway on the hard and smooth packed snow surface. They were about 30 feet from the house. All was calm for a few seconds, then the female, who seemed desperate to reach some shelter, scrambled some 10 feet to the edge of the driveway, literally carrying the motionless male, who was clearly locked onto her in copulation. She first attempted to climb up the low bank of snow, the male still upon her back, then she resorted to burrowing into the snow and thereby up to the surface. She emerged with the male still upon her back, but when she began to climb up upon a low-hanging cedar bough, the male fell backwards, though still attached to his mate—a ludicrous sight! She climbed upwards, he dangled momentarily, then he fell off and backwards into the snow, while she hurriedly climbed higher. A moment later, both squirrels were out of our view.

Wrigley (1986, p. 115) noted: "There are 2 mating seasons [for the red squirrel] throughout most of the range (February to March and June to July)... With the lengthening periods of daylight, the testes of the males enlarge and descend into the scrotum. The female comes into heat for only one day, during which she permits one or more adjacent males to enter her home range and mate. The mating chases are spectacular and noisy. Then she drives away all other squirrels and proceeds with her maternal duties on her own."[1]

1. Wrigley RE (1986) Mammals in North America. Hyperion Press Ltd., Winnipeg, MB.

- *Robert W. Nero, 546 Coventry Road, Winnipeg, MB, R3R 1B6*

The first great thing is to find yourself, and for that you need solitude and contemplation: at least sometimes. I tell you, deliverance will not come from the rushing, noisy centres of civilization. It will come from the lonely places.

- Fridtjof Nansen

AMERICAN WHITE PELICANS FEEDING ON LARGE FISH IN LANIGAN CREEK, SASKATCHEWAN

American white pelicans (*Pelecanus erythrorhynchos*) are a common sight on Saskatchewan lakes and rivers, where they forage for fish and amphibians. Pelicans are buoyant birds that sit on the water and dip their large bills below the surface to capture aquatic prey. The majority of pelican diet on the northern Great Plains is comprised of small fish, crayfish, and salamanders that they catch in shallow, near-shore areas.[1] An alternate foraging strategy used fairly often by pelicans in Saskatchewan is to wait below water control structures in rivers and creeks; here they target fish that gather as a result of impeded passage, or that are disoriented as they pass over or through the structure. Some 'hot-spots' for viewing this pelican foraging behaviour include the downstream side of the weir in the South Saskatchewan River in the city of Saskatoon, the Finlay and Campbell dams flanking Tobin Lake, and the Gardiner dam on Lake Diefenbaker. A lesser known location, but a spectacular one for close viewing of pelicans, is below the control structure on Lanigan Creek in the Last Mountain Lake National Wildlife Area and Migratory Bird Sanctuary (Fig. 1A). Up to several hundred pelicans may be present in the small pool below the control structure at any given time, depending on conditions (Fig. 1B).

In May of 2005 we spent 19 hours over a number of days observing pelicans foraging downstream of the Lanigan Creek control structure as part of a larger study on the diet of fish-eating birds in Saskatchewan. We used the length of fish captured relative to the length of pelican bills to estimate the size of fish caught (Fig. 2), and external features of the fish viewed with binoculars to identify species when possible.

During our observations, pelicans appeared to be targeting almost exclusively large fish when foraging below the Lanigan Creek control structure. Of 77 individual fish captured, all were 30 to 50 cm in length. We were able to clearly see identifying features of 19/77 (~25%) fish, which were of the following species: 14 (74%) common carp (*Cyprinus carpio*), 3 (16%) white sucker (*Catostomus commersonii*), and 2 (11%) northern pike (*Esox lucius*). Thus, pelicans in Lanigan Creek seem to be consuming mainly non-native carp. However, we are uncertain how well our data set reflects the actual diet of pelicans at this location because most of the fish captured (58 of 77 individuals) were not identified. The large fish captured were challenging for pelicans to handle, and they often fought extensively to steal prey from other birds (Fig. 3). There is good reason for the competition; a 50-cm carp would weigh approximately 1800 g, which represents the complete daily intake requirement for a pelican in one prey item.

[1] Knopf FL, Evans RM (2004) American White Pelican (*Pelecanus erythrorhynchos*). In: Poole A (ed) The Birds of North America Online. Cornell Lab of Ornithology, Ithaca, NY; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/057doi:10.2173/bna.57

- Christopher M. Somers,[1] Victoria A. Kjoss, [1]Department of Biology, University of Regina, Regina, SK; E-mail: <chris.somers@ uregina.ca>

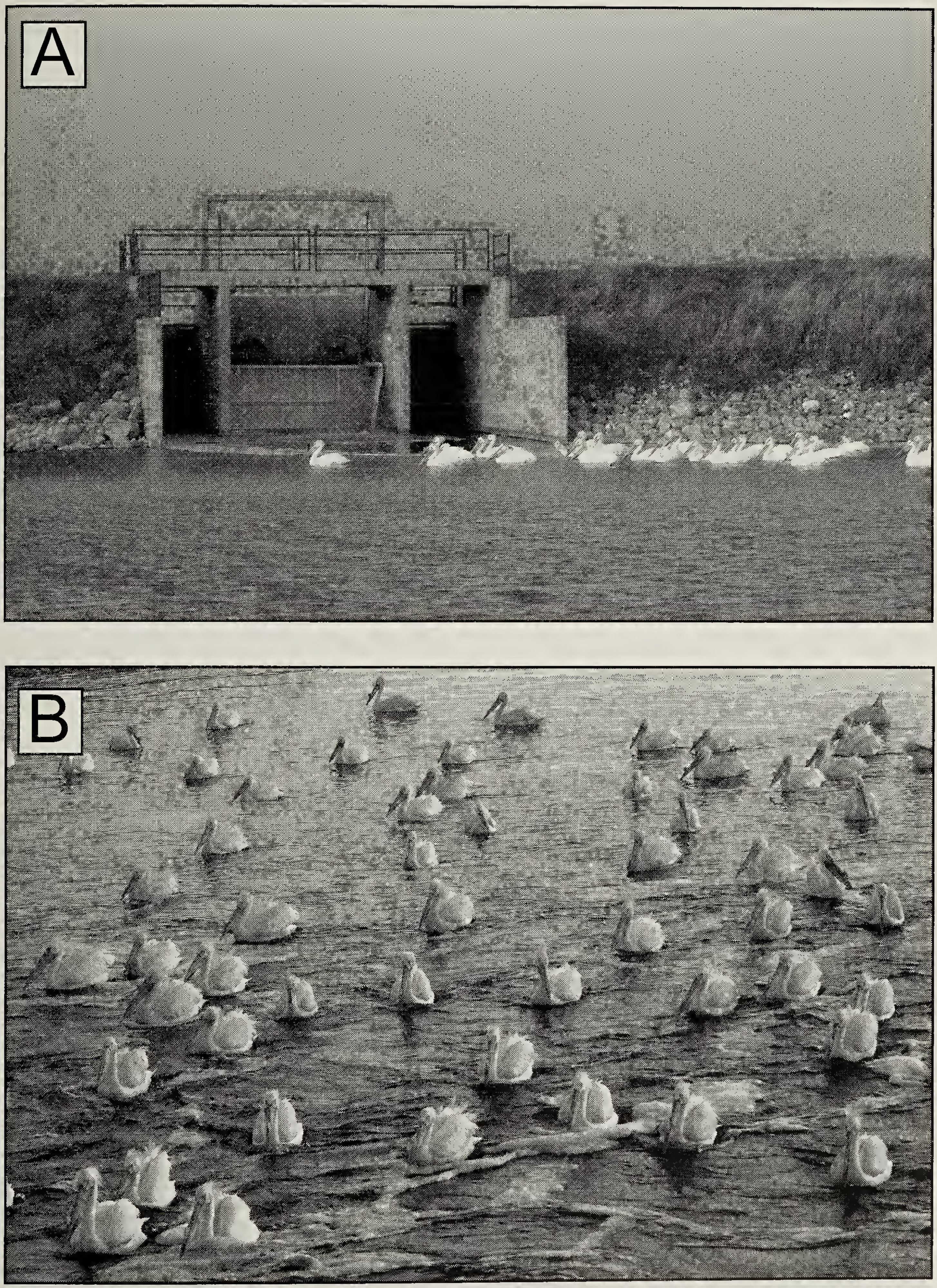


Figure 1. (A) Pelicans below the water control structure in Lanigan Creek on the Last Mountain Lake National Wildlife Area and Migratory Bird Sanctuary. (B) A group of pelicans searching for fish in Lanigan Creek. *Christopher Somers*

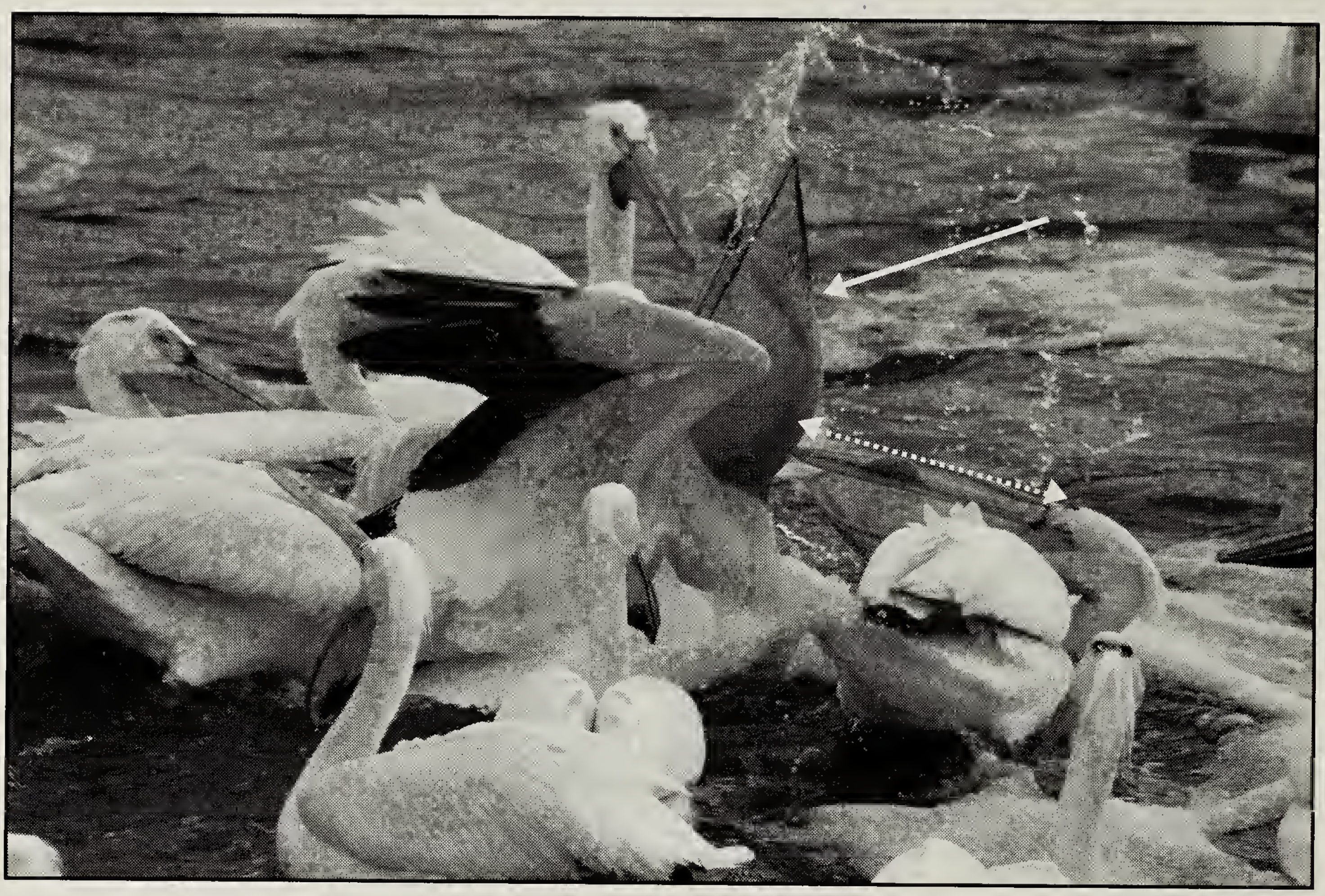


Figure 2. American white pelican capturing a large fish (solid arrow) in Lanigan Creek, Saskatchewan. The bill length for most pelicans is approximately 30 cm (dashed arrow); the fish captured here is curved along its body length, but is actually longer than the bill of the bird catching it. Christopher Somers

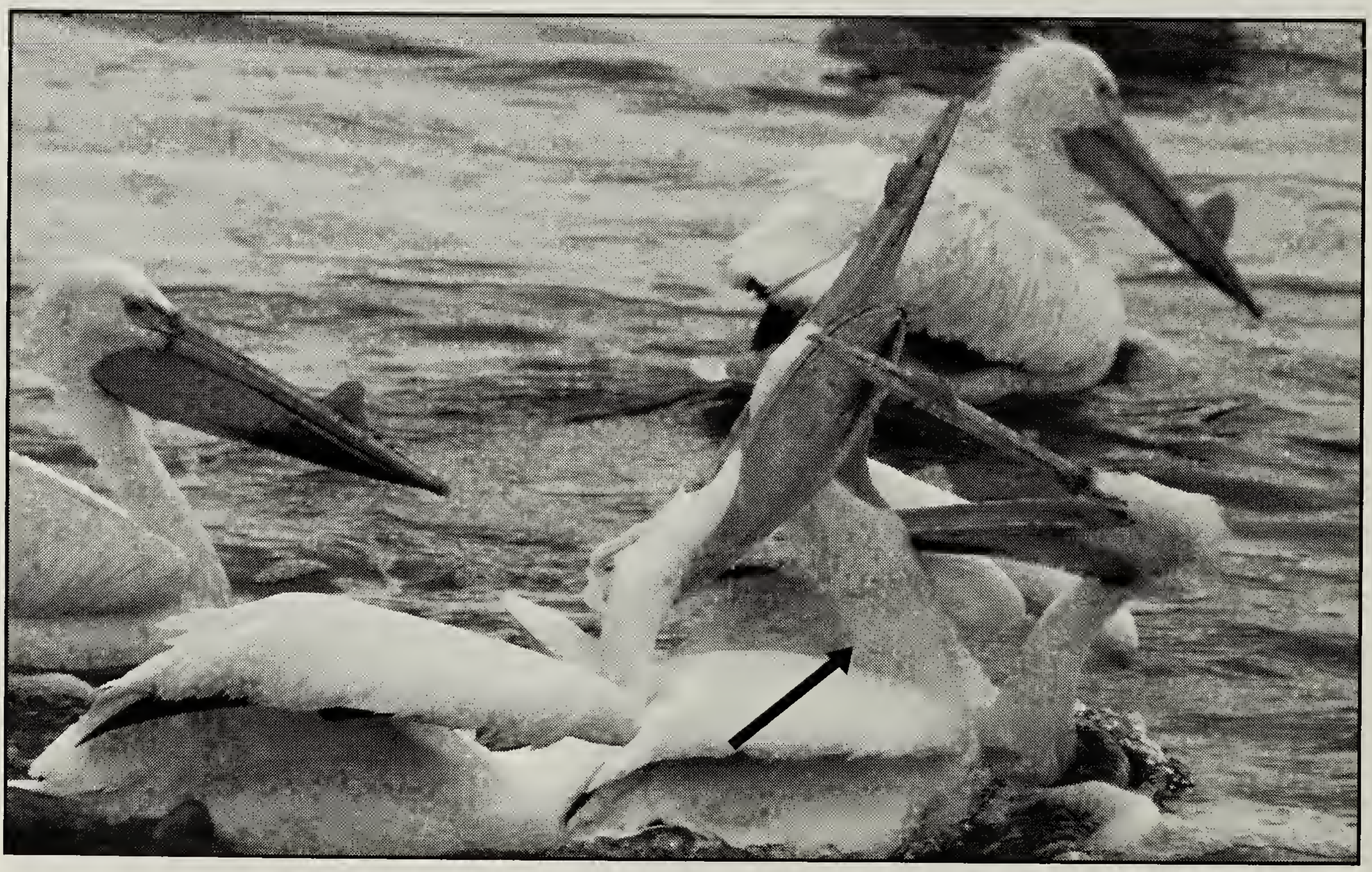


Figure 3. Pelicans fight over a large fish captured in Lanigan Creek. The bird in the center has already swallowed the fish, which is causing the throat distension that is visible (arrow). Christopher Somers

PHOTO NOTES

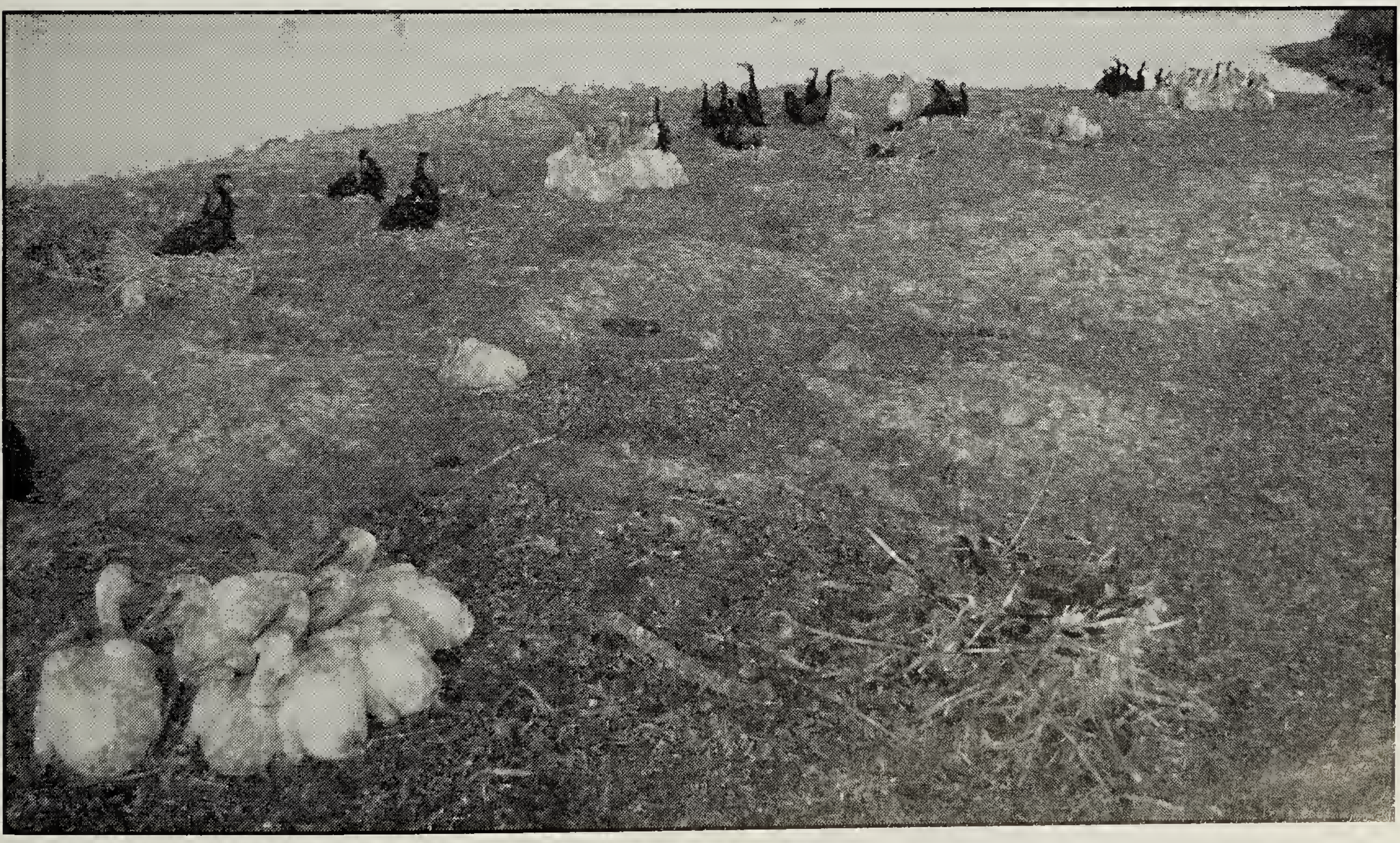
LATE NESTING PELICANS AND CORMORANTS

It was a beautiful warm sunny evening of 7 September 2011 when we decided to go for a quick canoe ride on Pelican Lake, approximately 9 km west of our home in Caronport, Saskatchewan. Although this was our first time on Pelican Lake this year, we had frequented it in previous years. We anticipated that we would see flocks of gulls, terns, ducks, and pelicans, getting ready for their journeys south to warmer climes. Much to our amazement, not far into our canoe ride, we came across a gravel island with a host of American white pelicans (*Pelecanus erythrorhynchos*) and double-crested cormorants (*Phalacrocorax auritus*) still in the nesting stage. This was the first time we had ever seen a colony of nesting pelicans or cormorants, let alone so late in the season. A quick count revealed that there were approximately 40 young birds of each species. Most of the pelicans seemed to be at the same stage of development, whereas the cormorants ranged from eggs, to newly hatched chicks, to fledglings. After snapping a few quick photos, we left the area to allow the parents to return to their young.

- Ken and Jo Jaarsma, Box 69, Caronport, SK, S0H 0S0; E-mail: <joken@sasktel.net>

EDITORS' NOTE: The history of nesting by pelicans and cormorants on Pelican Lake is uncertain. The site was not surveyed in any previous provincial colonial bird counts, and it may be a new breeding location for these species in Saskatchewan. For a review of pelican population trends in Saskatchewan, see:

Somers CM, Kjoss VA, Leighton FA, Fransden D (2010) American White Pelicans and Double-crested Cormorants in Saskatchewan: population trends over five decades. *Blue Jay* 68(2):75-86.



Young pelicans and cormorants on an island in Pelican Lake, SK

Short-eared owl. *Pete Hardie*

Pelican chicks in a crèche on Pelican Lake, SK. *Ken and Jo Jaarsma*

WATER MITES ON ODONATES

This past June (2011), we were visiting family in Loon Lake, SK (near Meadow Lake). While playing in the lake, our sons and their cousins were on a dragonfly rescue mission and fished all floating odonates out of the water. One large dragonfly clung to a stick, which the kids gently placed on the beach. Having just received a brand new camera for my birthday several weeks prior, I was eager to try out my macro lens on the immobilized dragonfly. I got down on my belly and started shooting ... closer, closer, clooooser.... Eventually, my lens was practically touching the dragonfly's eyes. Zooming in, I noticed tiny red mites crawling all over the insect (see inside back cover, top, panel A). They resembled the little red mites that I used to watch while perched on my grandmother's sandstone wall in Germany, but as far as I know, those mites were strictly terrestrial. So I was a bit confused as to why a dragonfly that had recently been taken out of water would have mites crawling on it. A quick search on the Internet suggested that these mites likely belong to the group Hydracarina (also referred to as Hydrachnidia, Hydrachnida, or Hydrachnellae), which includes over 40 families of water mites (for more on these, see the following University of Alberta page: http://sunsite.ualberta.ca/Projects/Aquatic_Invertebrates/?Page=23). I wouldn't even begin to make an attempt at identification, but perhaps some readers are more familiar with Saskatchewan's aquatic invertebrates ? Presumably, the mites hitched a ride after the dragonfly had fallen into the water. While I was photographing the downed dragonfly, several ants approached it and began exploring its head and body (see inside back cover, top, panel B; one ant is circled in red); I watched carefully to see whether the ants would prey on the mites, but alas, they did not. For the most part, the ants appeared to "ignore" the mites. Nevertheless, it was quite interesting to watch this miniaturized action unfold.

On that same beach, I was also pursuing damselflies with my camera. On several individuals, I noticed aggregates of very small, reddish-brown spheres, which, knowing absolutely naught about odonates, I had simply assumed must be eggs (see inside back cover, top, panels C and D). Coincidentally, while I was double checking the water mites described above, I came across a website on which had been posted several photos showing both a dragonfly and a damselfly sporting virtually identical "eggs" to those that I'd observed. According to this site (http://taos-telecommunity.org/EPOW/EPOW-Archive/archive_2011/EPOW-110418.htm), the spheres are water mites of the Hydrachnida that are engaging in a process termed 'phoresy,' which essentially means that they are hitchhiking on the damsel. The site further explains that "*[t]he water mites attach to the dragonfly larva during the dragonfly's aquatic stage in ponds, lakes, and other slow-moving waters. The tiny mites then transfer to the adult dragonfly or damselfly when it exits the water and emerges from its larval casing. Like miniature hobos 'riding the rails,' the mites travel with the dragonfly, eventually detaching from it as it becomes sexually mature and returns to water to breed. At this point, the water mites drop off and begin their life cycle all over again, perhaps in a new location some distance from their native waters.*"

- Victoria Kjoss, 3426 Clover Place, Regina, SK, S4V 1J1. E-mail: <kjoss@sasktel.net>

NATURE LIBRARY

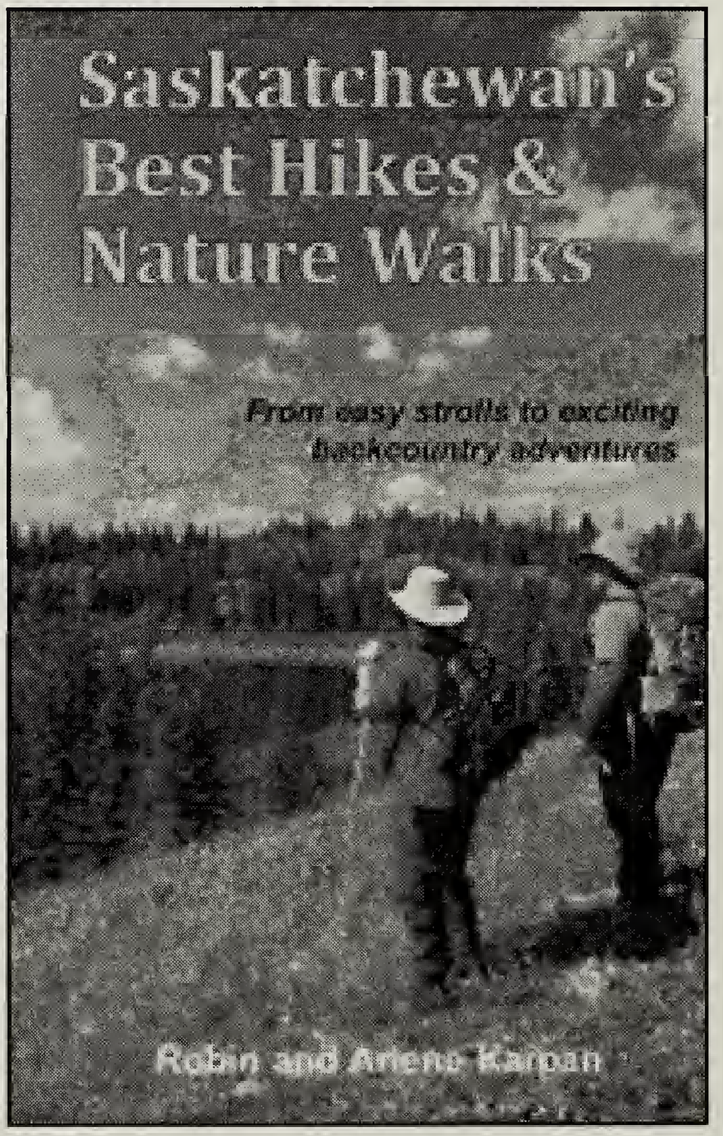
SASKATCHEWAN'S BEST HIKES AND NATURE WALKS.

Robin and Arlene Karpan. 2011. Parkland Publishing. Saskatoon, SK. $19.95 CDN. Soft Cover. ISBN: 978-09809419-2-0. 272 pages. 183 black and white photos. 89 maps. 14 cm by 21.6 cm.

Saskatchewan's Best Hikes and Nature Walks is the latest book by well-known Saskatchewan nature and travel writers and photographers Robin and Arlene Karpan. This book is an updated version of the Karpans' earlier *Saskatchewan Trails - Nature Walks and Easy Hikes.* This updated version does include more challenging backcountry hikes. There's something for everyone in this book, with hikes of varying lengths, terrain, accessibility, and difficulty across the province. This handy and comprehensive guide contains over 150 of the best trails for hiking and nature watching in Saskatchewan. Most hikes in this book follow well-marked and maintained trails suitable for anyone with average ability and experience.

First-time readers of this book should read carefully the introductory chapter, as it contains key information about using the trail accounts in this guide and important cautions that hikers need to heed in order to have an enjoyable, safe, and injury-free nature adventure. These cautions discussed here include bears, snakes, poison ivy, cacti, stinging nettle, ticks, mosquitoes, blackflies, and hunters. In the trail accounts, other cautions discussed include grazing cattle and bison, wet conditions, steep slopes, and terrain obstacles such tree roots and stumps. This introductory section also includes common-sense advice about having sufficient water supplies, proper footwear, sun protection, and letting others know where you are. Distance and times listed in the volume are merely guideline suggestions. Maps in the book provide a simple overview of trail systems and do not show scale or topography. As the authors note, more information can be obtained from Tourism Saskatchewan, detailed maps can often be obtained from the responsible park, and municipality or trail authority and topographic maps are available from the Information Services Corporation.

After the introduction, the book is divided into 23 recognizable geographic regions



to help readers find trails more easily. Each geographic section begins with its approximate location in the province. Most trail accounts contain critical information about distance or length, time, facilities, cautions, landscape features, views, wildlife, and other fascinating facts about the trail. Overview maps are included for 89 trail systems. One or more black and white photos enhance many trail accounts. These photos would have been spectacular in colour.

This volume is very well written and researched by the authors, who visited and inspected each trail discussed in the book. Of the trails in this volume that I have personally visited in recent years, I found the information to be extremely accurate so I have confidence that information throughout the book is accurate at the time of writing. The authors do place a key disclaimer at the beginning of book stating that trail conditions change over time due to weather and other factors and that readers should do their research and contact the authority responsible for the trail before hiking.

As the Karpans say on their website "Whether you prefer an hour's stroll along an easy path or a week hiking in remote backcountry, there's never been a better time to take a hike", I agree. Therefore, I highly recommend this extremely useful and reader-friendly guidebook to anyone interested in hiking and nature watching in Saskatchewan.

- Reviewed by Rob Warnock. E-mail: <warnockr@accesscomm.ca>

Adopt the pace of nature: her secret is patience.

- Ralph Waldo Emerson

Are they coming or going? Canada geese over Last Mountain Lake, SK.
Lowell Strauss

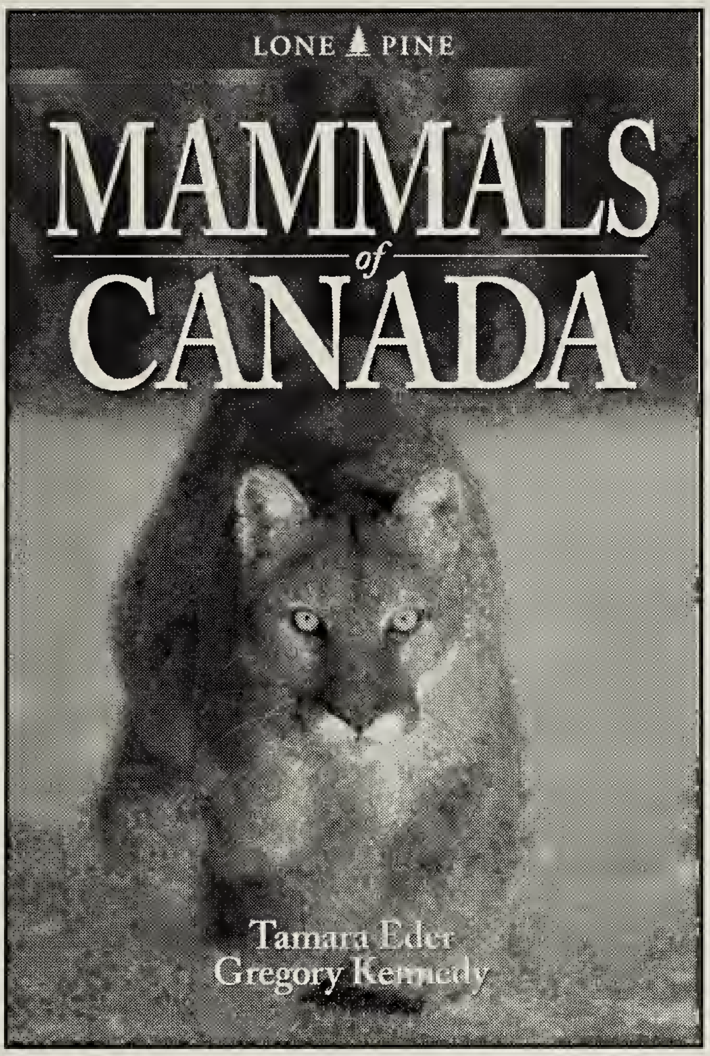
MAMMALS OF CANADA

Tamara Eder and Gregory Kennedy. 2010. Lone Pine Publishing, Edmonton, AB. $39.95 CDN. Hard cover. ISBN: 978-1-55105-857-3. 448 pp. 15.2 cm by 22.9 cm.

The Lone Pine *Mammals of Canada* contains species accounts for 188 native and feral mammal species that are encountered in Canada. The species accounts are divided into nine colour-coded sections based on the mammalian orders found in Canada. Each of these sections includes a two-page spread highlighting the key characteristics of the members and corresponding mammalian families belonging to the order. Easy to use and useful species identification keys are included for two difficult mammalian orders: bats and shrews.

This volume uses the same attractive and successful species account layout used in all other recent Lone Pine Publishing wildlife guides such as *Saskatchewan and Manitoba Nature Guide* and *Birds of Canada*.[1,2,*] The length of species accounts (one to four pages) depends on the amount of known information for the species and the inclusion of photographs. Photographs are used almost exclusively in accounts of selected marine mammals, ungulates, and larger charismatic larger carnivores such as bears. Ideally, at least one photo should have been included for all species accounts. Each species account includes one or more accurate and attractive colour illustrations, introductory natural history paragraph(s), habitat, food, den (for terrestrial mammals), reproduction, physical dimensions, blow (for whales), tracks (for terrestrial mammals), and similar species. For the similar species section, clear differences between the species are highlighted and include page number(s) where you can find the corresponding species account(s) for the similar species. In addition, each species account contains a sharp but simple Canadian range map and a related paragraph describing past and current North American range for the species. For species with restricted ranges in Canada, enlarged inserts are included with the Canadian range map. An unusual feature was added with question marks on the range maps to indicate range uncertainties. Unusual and interesting 'Did you know?' factoids are included in the accounts for better-known mammalian species (for example, the account for Muskox [*Ovibus moschatus*] includes the following factoid: "With the long, windbreaking guard hairs and insulating qiviut, the winter coat of a Muskox is about eight times warmer than sheep's wool."). It was unfortunate such factoids were not included in the accounts for lesser-known species as well. I found the species accounts information to be accurate, informative, easy to read, and well written. A brief section on species conservation status would further strengthen the species accounts.

A particular strength of book is the Introduction, which includes a map and brief informative summaries of the natural regions of Canada and their terrestrial and marine ecozones and ecoregions of Canada. These sections include a photograph of a well-known species representative of the natural region. The authors then briefly discuss the impacts of human-altered landscapes and seasonality on mammals and provide some useful and practical tips on watching mammals. The top 30 mammal-watching sites in Canada are



included in the book with a national map and brief site descriptions. Twenty-one of these top mammal-watching sites are national parks. The Introduction concludes with brief useful overviews of mammal classification and names, range maps, similar species, and the identification keys for shrews and bats.

Mammal species in this guide can be quickly located using the Table of Contents, the detailed Index in the back, the colour-coded, 13-page introductory Quick Reference Guide in the front of the book, a colour-coded abridged reference guide on the back cover, and individual chapter reference guides. These guides are error-free.

At the end of the book, there is a handy and useful six-page Glossary of ecological and wildlife terms, followed by a helpful one-page list of Selected References including 11 books and five websites about the mammals of North America.

In conclusion, I highly recommend this excellent guide to anyone who is interested in the mammals of Canada.

1. Hoar TL, De Smet K, Campbell RW, Kennedy G (2010) Birds of Canada. Lone Pine Publishing, Edmonton, AB.

2. Kagume K (2010) Saskatchewan and Manitoba Nature Guide. Lone Pine Publishing, Edmonton, AB.

- Reviewed by Rob Warnock. E-mail: <warnockr@accesscomm.ca>

***EDITORS' NOTE: For a review of Birds of Canada, see *Blue Jay* 68:220-221, and for a review of *Saskatchewan and Manitoba Nature Guide,* see *Blue Jay* 69:42-43.**

* * *

*I do not think the measure of a civilization is how tall its buildings of concrete are,
but rather how well its people have learned to relate to their
environment and fellow man.*

- Sun Bear of the Chippewa Tribe

POETRY

A LEAF IN THE WIND

A rolling, crumpled, brownish leaf's
a crawling, furry mouse
that halts before a rift of earth
to hunker down and drowse—
until it's buffeted awake
and scurries forth to keep
its rendezvous with autumn things
and their long winter's sleep.

- *Victor C. Friesen*

* * *

SNOW GEESE

This late September day, clouds scudded north,
streamed by before the gale-force wind, while geese,
migrating south, a mix of snows and blues,
sat huddled in a compact white ellipse
upon a slope of blackened summer fallow—
a thousand strong but now too weak (and wise)
to face the equinoctial storm: silent
they were, and waiting.
Thus I saw them on
a neighbour's field, while I drove to the old
deserted farm where I was born—to do
my before-winter check of buildings, to
repair, replace disintegrating boards
on each north wall—the house had after all
withstood almost a hundred years of rain
and snow as well as buffeting strong winds.
So I was outside all the afternoon,

a farmer once again at autumn chores
and soothed by this wind's rush through nearby bushes.

Then what?—a crying, rising blur of sound
like sheep alarmed and baaing: the snow geese
awhirl, not in an ordered flock, but up
and swarming like a hive of buzzing bees
or snowflakes in a blizzard—pell-mell their
confused flight, high-pitched *kowks* their chorus. All
were sailing overhead, and I fixed on
a pair, a snow and blue held pivot by
the wreathing mass that swept around with but
scant progress made athwart fierce winds; and then
the thousand drifted sideways, dropping down
with slow deliberation, wings bent low,
to settle on the fallow field once more;
with this, their gabbling grew more quiet.
Still,
they seemed possessed with nervous energy,
a mobbish restlessness: "to up and go"
their resolution. Several times that day
a portion of them—never large enough
to fill the sky, as I'd just seen them—rose
with urgent clamour, tried to breast the wind,
then hesitant, unsure, fell softly back
in short zigzags to seek the refuge of
the flock.
It was at dusk that all the geese
took wing, a melee of strong pinions tipped
with black, of snowy bodies tinted now
just faintly yellow from the day's last light:
a visual exultation, even more
a jubilee of sound. I saw and heard
them circle upwards, pause, and then begin
their slither downwards, landing on a field

next to my yard (oblivious to both
my presence and my carpentry) in two
distinct and widely separated circles,
startlingly white again in yellow stubble.

Again, their restive day continued. Back
and forth some flew with fresh outcries and babble
till the entire full thousand rose and swirled
into another wondrous honking squall—
how charming they could be, and how charmed, I—
and settled finally much farther down
in one tight concentration for the night,
appearing like a lingering drift of snow.

I gathered up my tools then, ceased my work
of patching up a century-old house;
the geese were resting from a needful flight,
the flights that dated back millennia,
to times when continental glaciers forged
their slow course south and covered all the land
seen hereabouts with a more ancient whiteness.

- *Victor C. Friesen*

Lesser snow geese during fall migration.
Kerry Hecker

[Editors' Note: While the following two poems were written about Eurasian species, we believe that the underlying sentiments are applicable to their North American counterparts as well.]

Time Travelling

('Muscicapa striata: The Spotted Flycatcher')

Numbers have declined 84% since 1967, 59% since 1994.

Each spring as you stack up they journey north,
re-lay that nest in your old garden wall.
You catch them at their ease, such elegance;
ash brown above a creamy dappled breast.
They dart and twist, snap insects on the wing,
turn deftly back to where they started from.
Eggs warm to touch, as sheer as porcelain;
flecked shades of gilded bronze, the Midas brush.
Then, all too soon, they leave. You dream, conceive
strange distances, exotic latitudes
you've never seen. Now you've long flown and your
old habitat's turned down, six houses scheme.
That's progress, you concede, fast in the fourth
dimension where your travellers still breed.

- Peter Branson

* * *

After sleeping through a hundred million centuries we have finally opened our eyes on a sumptuous planet, sparkling with color, bountiful with life. Within decades we must close our eyes again. Isn't it a noble, an enlightened way of spending our brief time in the sun, to work at understanding the universe and how we have come to wake up in it? This is how I answer when I am asked -- as I am surprisingly often -- why I bother to get up in the mornings.

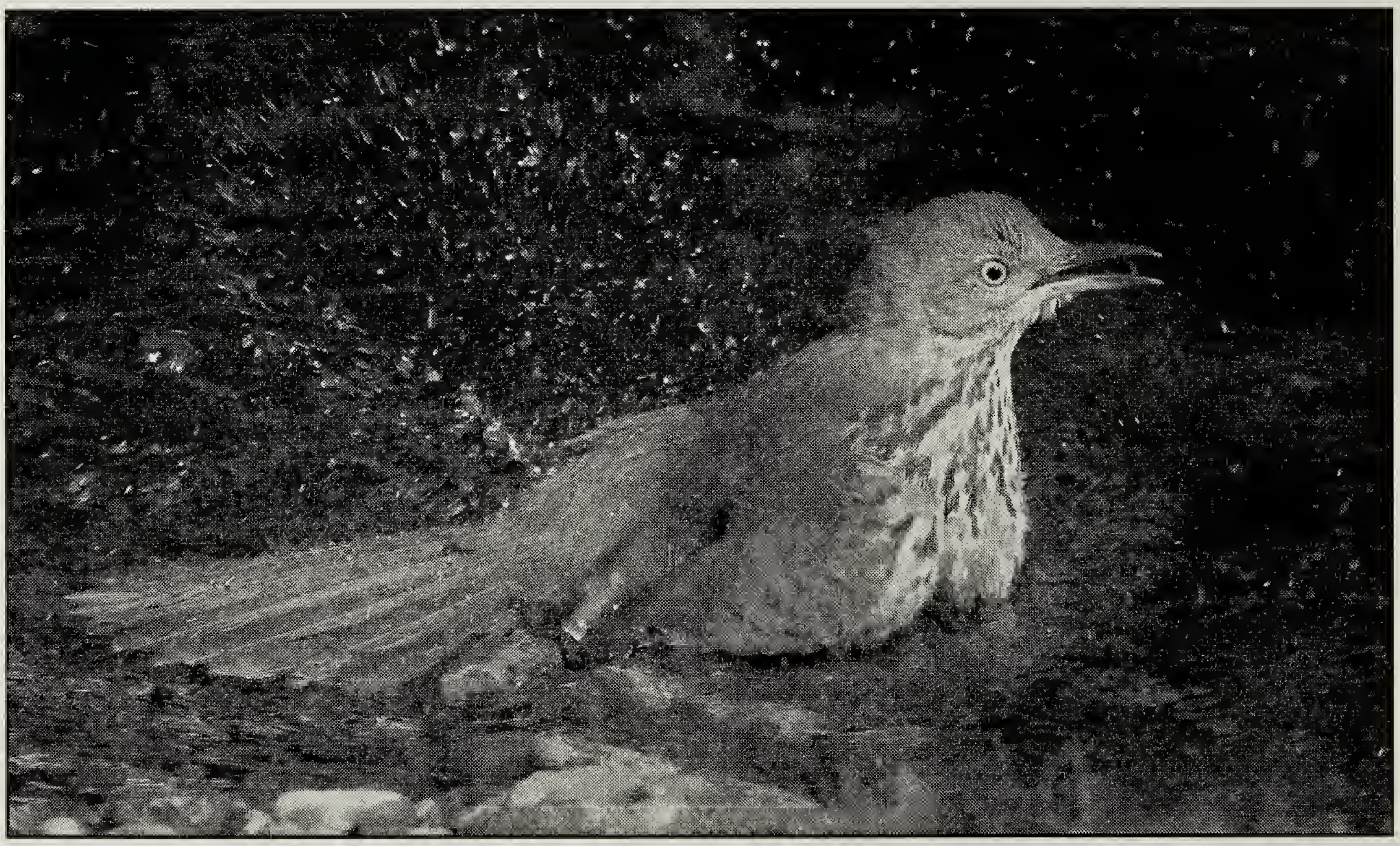
- Richard Dawkins

SWIFTS

The Common Swift: Apus apus

Not here this year, lost souls, homes worn away,
handhold to fingertips, like spent pueblos.
They don't die back or hibernate, but cruise
vast distances above the turning world.
July evenings, they side-step, scissor-kick
thin air, etch pen 'n' ink invisible
tattoos. Banshees, dust devils in wet suits,
anchors on skeins of rising light, they're soon
shrill specks in your mind's eye. Time lords, stealth craft
hot wired to while away brief summer nights,
they preen, breed on the wing, use what the wind
blows in to feed, fix nests under house eaves.
Broadcast, they silhouette the urban sky,
shape-shift, in one heartbeat, present and past.

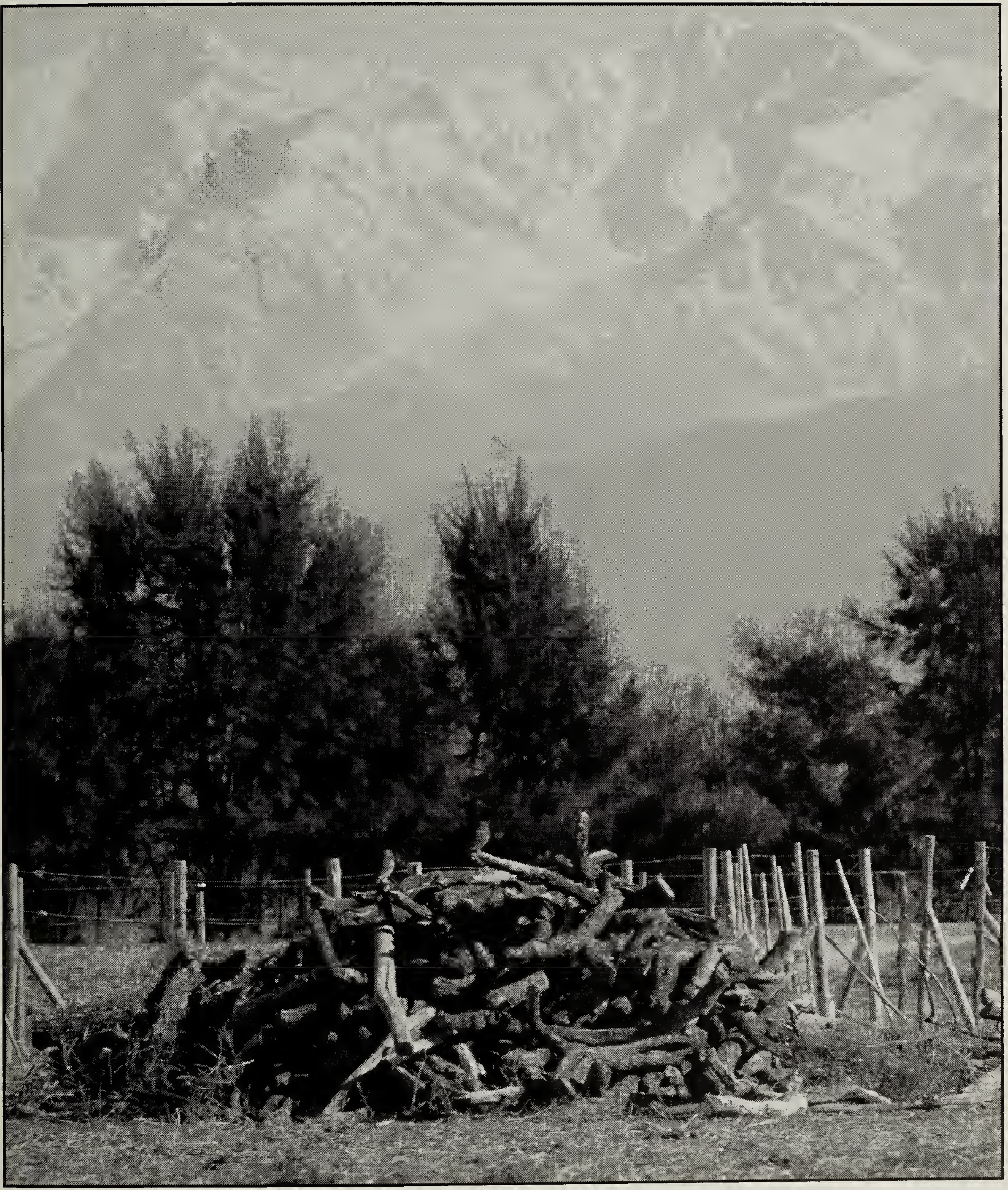
- Peter Branson



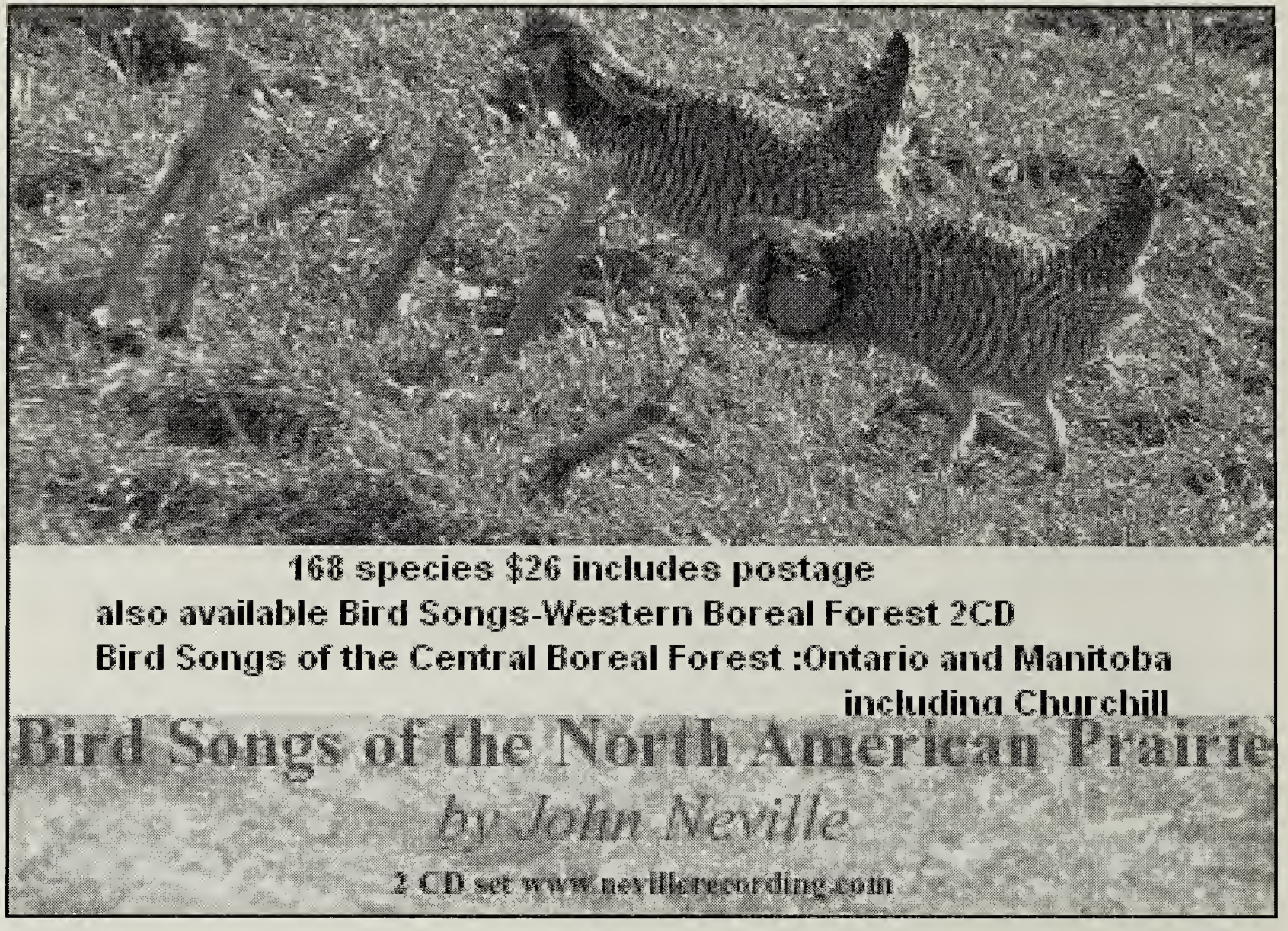
Thrasher bath. *Nick Saunders*

MYSTERY PHOTO

ANSWER TO THE JUNE 2011 MYSTERY PHOTO



Our last Mystery Photo was not about "what?", but rather, "where?" Mark Brigham had submitted this image of two tiny burrowing owls *(Athene cunicularia)* perched atop a large pile of logs. Mark admitted that this photo was a "trick pic", in that it was in fact taken in a vineyard near Mendoza, Argentina, where burrowing owls are year-round residents.



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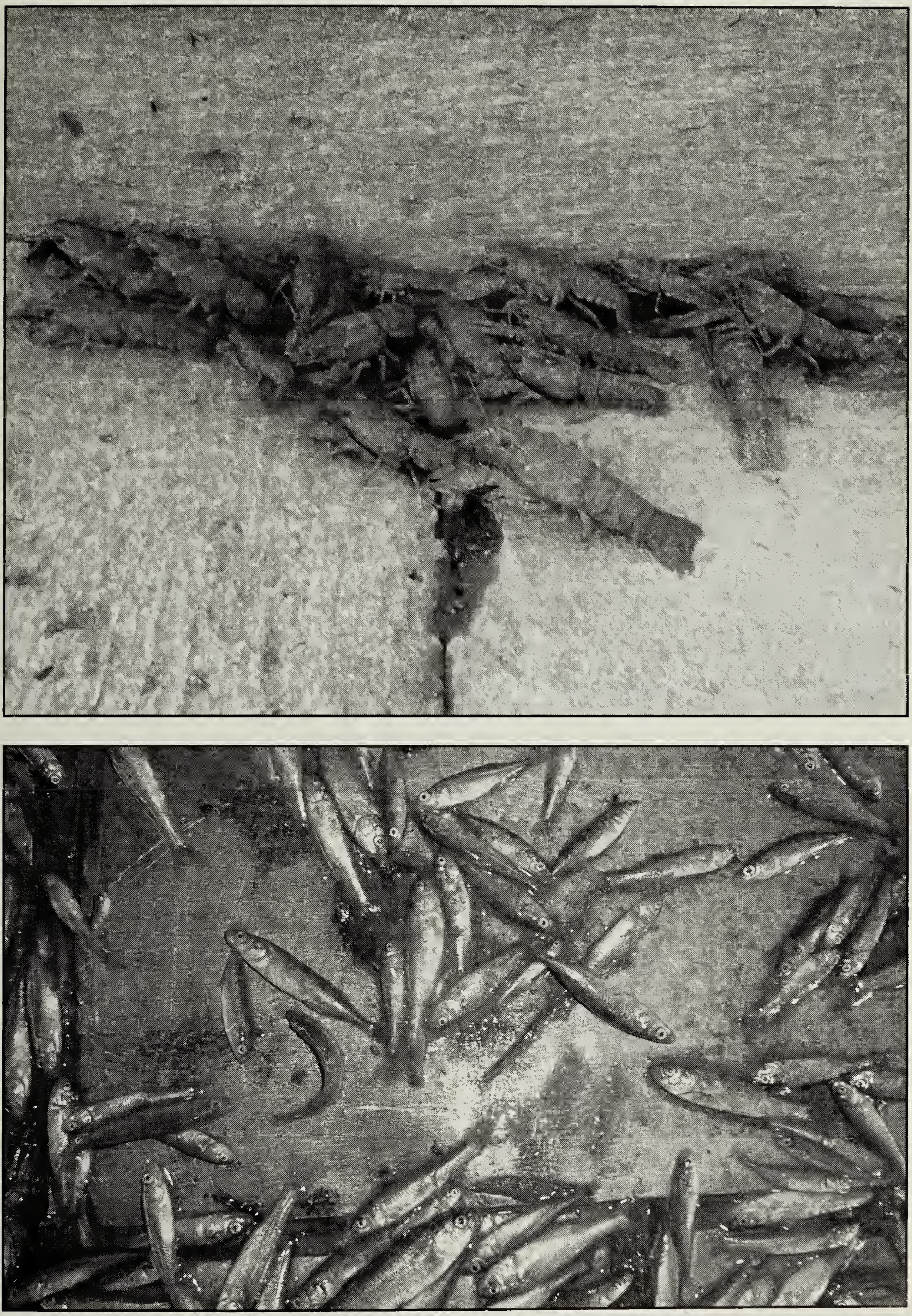
SEPTEMBER 2011 MYSTERY PHOTO - CRAYFISH CONVENTION AT WASCANA LAKE

On 15 August 2011, while walking around Wascana Lake in Regina, SK, our sons discovered a small crayfish on the path. After several steps, they found another one. And then another. And another. And then the mother lode. Just below the Broad St. bridge, on a fairly new, low-set concrete portion of the walking path, we encountered thousands of crayfish crawling on the cement or bunched up against the wall. Many of them were dead already, while others seemed to be making their way back into the water, plunging lemming-like off the wall and into the lake. Most of the crayfish were on the small side, no longer than ca. 2 to 4 cm. The lowest point of the path was still wet and slick with mud, and in the middle, emerging from the holes in a metal cover, were hundreds of small fish (ca. 2 cm), some still flapping. The underpass had recently flooded, and it appeared that the fish, and possibly the crayfish, had been pushed up through the holes.

We were stumped as to why there were so many crayfish in this one spot. At most, we've ever seen the occasional exoskeleton or dead individual tucked in between the rocks around the lake, but we have never seen such high numbers or such dense masses of crayfish. To our knowledge, not many formal studies of *Orconectes virilis*, the northern or virile crayfish, have been conducted in Saskatchewan.

Can anyone explain what may have happened on 15 August to cause this aggregative behavior?



Top panel: One of many clusters of crayfish observed at Wascana Lake, SK, on 15 August 2011. Bottom panel: Dead fish found near the crayfish.

Blue Jay, founded in 1942 by Isabel M. Priestly, is a journal of natural history and conservation for Saskatchewan and adjacent regions. It is published quarterly by **Nature Saskatchewan, 206-1860 Lorne Street, Regina, Saskatchewan S4P 2L7.**

CN ISSN 0006-5099

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Common and scientific (Latin) names are used for all species. Common bird names follow the Checklist of North American birds by the American Ornithologists' Union (7th edition, 1998); mammal names: Mammal Species of the World by Wilson & Reeder; butterfly names: The Butterflies of Canada by Layberry et al.;and names of reptiles and amphibians follow Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with comments Regarding Confidence in our Understanding, Sixth Edition, by The Committee on Standard English and Scientific Names (Brian I. Crother, Chair) (2008).

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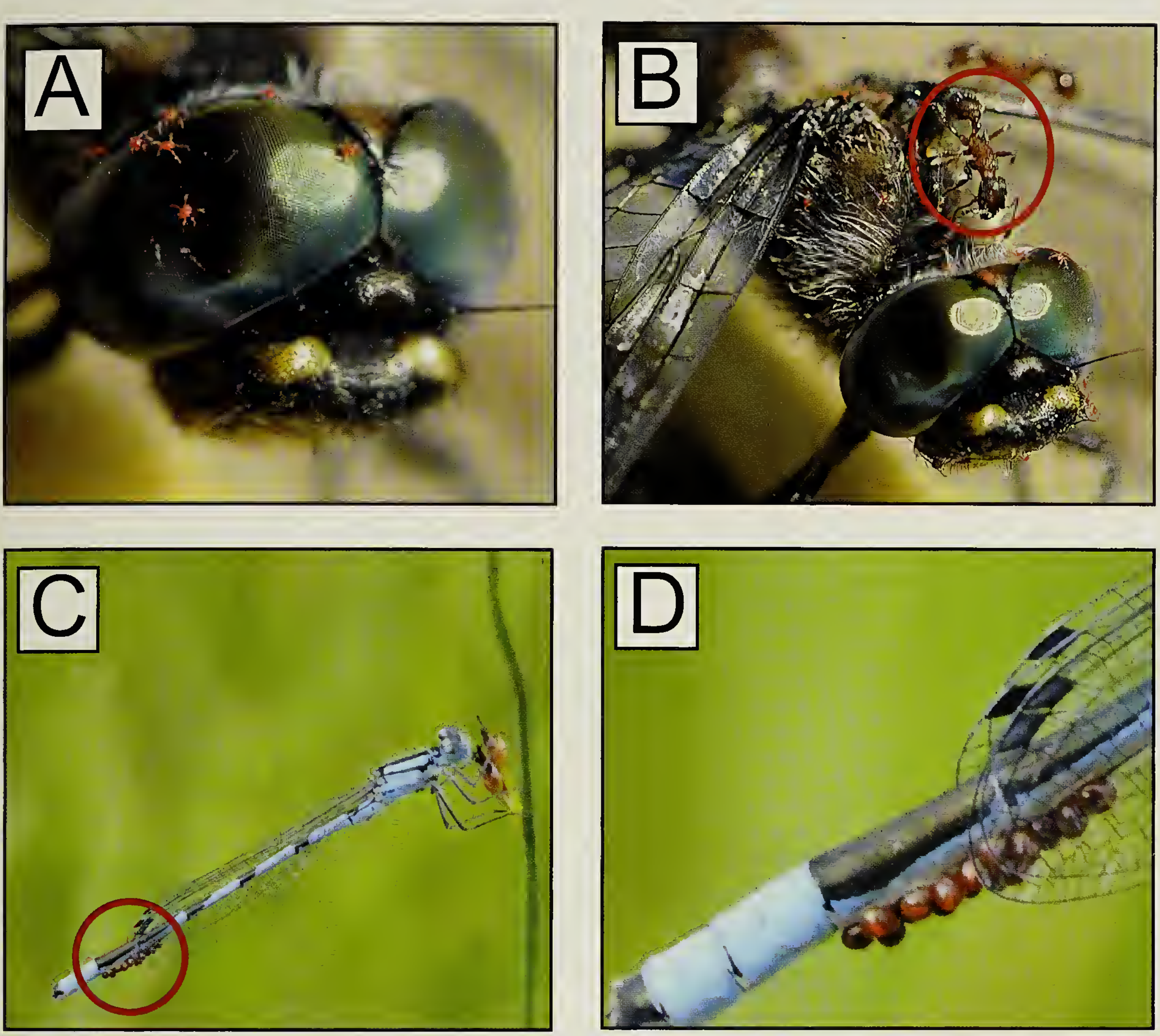
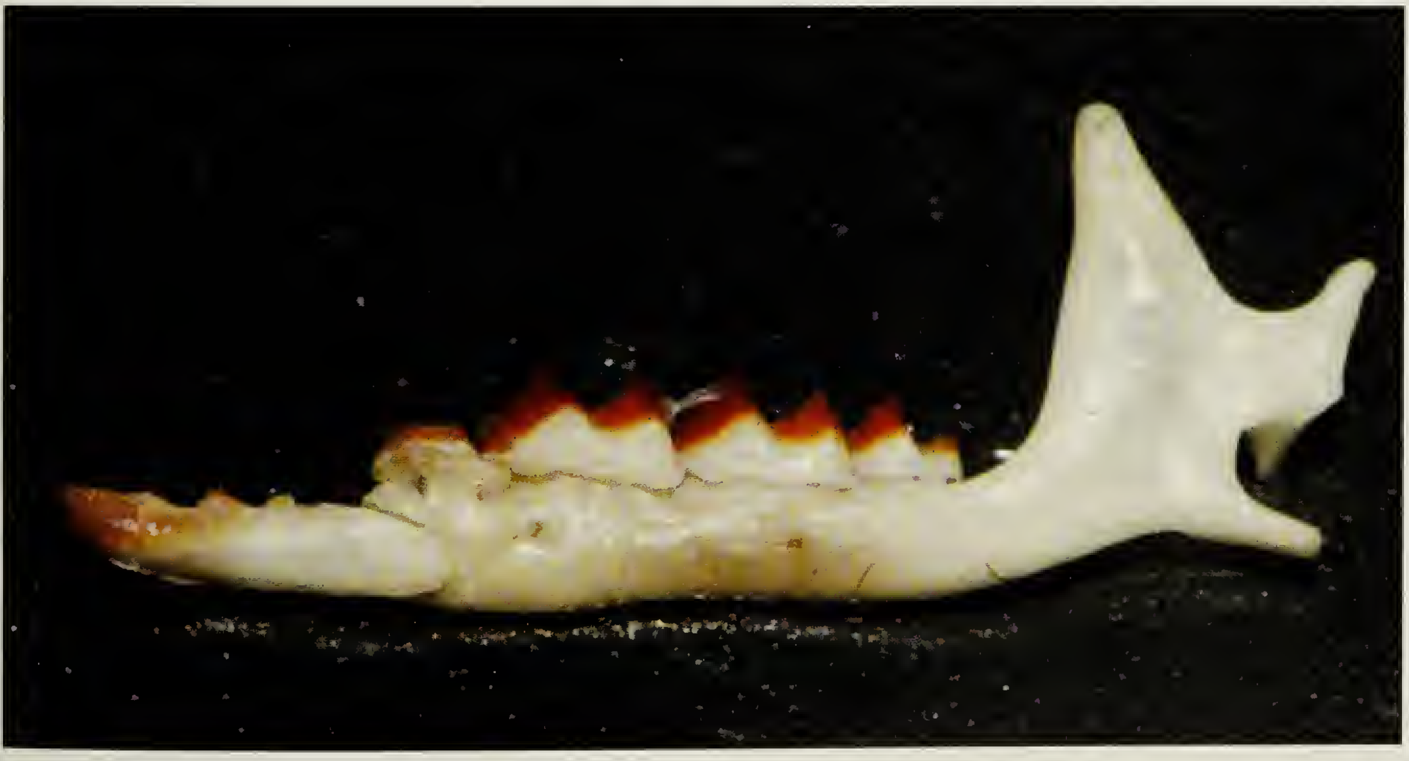


Panels A & B: Dragonfly with water mites and ants. Panels D & C: Damselfly with water mites. See Photo Note on p. 137.
Victoria Kjoss



Mandible of Preble's shrew. See article by Poulin & Schowalter on p. 117.
Ray Poulin

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